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AIRPOWER AND GRADUAL ESCALATION:

RECONSIDERING THE CONVENTIONAL WISDOM

BY

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ABSTRACT

This study reexamines the concept of gradualism. Written off as an unworkable concept after the Vietnam War, gradualism worked in NATO's recently completed Operation Allied Force. Since it is reasonable to believe that national decision makers and military commanders may have to conduct another graduated air operation in the future, this study examines what conditions must be fulfilled or avoided to maximize the chances for a successful graduated air campaign. Since most contemporary strategists do not fully understand the components of gradualism, the study begins by deriving from the writings of Thomas C. Schelling, perhaps the best-known theorist of gradualism, a definition and theoretical propositions for gradualism. The conclusion from this is that bargaining and communication between the two adversaries, a well-coordinated effort between the military and diplomatic instruments of power, and an intensive and extensive understanding of one's adversary are all key facets of gradualism. Following the theory is a theoretical critique of gradualism, comparing it to the principles of Clausewitz, to the ideas of several airpower theorists, including John Boyd and John Warden's theories of strategic paralysis, and to the theoretical and empirical lessons of the psychological impact of air attack. This suggests that the key tenets of gradualism are explicitly contrary to the theoretical underpinnings of the way western nations conduct warfare. The second part of the critique analyzes the application of graduated airpower during Operation Rolling Thunder, 1965-68, as well as exploring two other graduated campaigns: the Egyptian-Israeli War of Attrition, 1969-70 and NATO's Operation Deny Flight/Deliberate Force, 1992-95. The conclusion is that the contextual variables of the Cold War as well as American and Israelis mistakes doomed the graduated use of airpower in Vietnam and the War of Attrition. Conversely, NATO's graduated use of airpower in Deny Flight, culminating with Deliberate Force, demonstrated that the military can execute a politically risky operation within broad political constraints, that NATO's operational execution of the Deliberate Force should be viewed as an archetype for how a graduated airpower campaign could be planned and executed in the future, and that airpower is now a sufficiently precise instrument and can be wielded with sufficient dexterity that it can, under the right circumstances, be used to send subtle messages to an adversary.

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INTRODUCTION

> When the political and tactical constraints imposed on air leaders are extensive and pervasive—and that trend seems more likely than less likely—then gradualism may be perceived as the only option. Whether or not we like it, a measured and steadily increasing use of airpower against an opponent may be one of the options for future war. If this is an option, then it is our obligation to optimize the tools we use to achieve success.

> General Joseph W. Ralston, 14 September 1999

> There is no point, really, for air power exponents grumbling about escalation or gradualism. If we are going to maximize air power responsiveness, we will have to turn it on and turn it off. The important thing is to make sure we reach the necessary impact before we turn it off and establish hard-nosed rules for gaps.

> *Air Vice Marshal Tony Mason, 16 August 1999*

Gradualism is a concept so distasteful to military officers in general, and to veterans of Operation Rolling Thunder in particular, that most will not even entertain the idea that it might be a viable strategic option for the use of airpower. One of the many lessons that the U.S. military took away from Vietnam was the importance of not gradually escalating the combat power that is applied against an adversary. U.S. Secretary of Defense Caspar Weinberger later codified this idea in 1984 as one of the tenets of the Weinberger Doctrine. The U.S. Air Force learned this lesson, too. The leaders of the air campaign in Operation Desert Storm, mostly veterans of Rolling Thunder, exorcised the demons of gradualism with the massive and sustained use of airpower against Iraq in January and February 1991—with the now well-known spectacular results.

Yet Operation Allied Force, the NATO bombing campaign against Yugoslavia in 1999, seems to contradict the lessons learned from Vietnam and validated in Desert Storm. NATO employed airpower in a graduated manner in Allied Force, yet was still able to coerce Yugoslav President Slobodan Milosevic to accede to the terms of the

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Rambouillet Accords. The contradiction between the lesson derived from Vietnam about the graduated use of airpower and the success of airpower over Kosovo is perplexing.

Reconsidering Gradualism[1]

As a number of well-regarded airmen have recently suggested, a reconsideration of the concept of gradualism is overdue.[2] There are two reasons why this is the case. The first is that applying airpower in a graduated manner is not an aberration that only appeared as NATO planned to coerce Milosevic. A variety of circumstances may require airmen to plan and execute graduated campaigns in the future. One circumstance is alliance politics if the United States intervenes in conjunction with other states. If the alliance makes decisions by consensus, then it is likely that any decision to use military force will be difficult to attain, and even when military action is authorized, the alliance may only allow what it perceives to be the minimal amount of military force needed to conduct the operation. It may also be difficult to get approval for rapid escalation in the conflict. Furthermore, if the alliance is trying to gain and maintain the moral high ground with the world community, then preserving political cohesion within the alliance becomes a major concern at the political level. This may be to the detriment of the military effort.[3]

A lack of forces available to do anything else is another reason that may force airmen to conduct a graduated air campaign. As the U.S. military downsizes, and more of the remaining force structure is withdrawn to the United States, less air capability remains overseas. While the Air Force has the capability to deploy its U.S.-based assets

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[1] The terms gradualism, graduated escalation, *et. al.* are used interchangeably throughout this thesis. There is no difference in the meaning or in the intent of the use.

[2] In addition to General Ralston and AVM Mason, see Colonel Phillip S. Meilinger, "Gradual Escalation," *Armed Forces Journal International* (October 1999): 18; and Alan Stephens, *Kosovo, Or the Future of War* (RAAF Fairbairn, Australia: Air Power Studies Center, August 1999).

[3] For a deeper discussion of the intricacies of coalition warfare, see Matthew C. Waxman, "Coalitions and Limits on Coercive Diplomacy," *Strategic Review* 25, no. 1 (Winter 1997): 38-47. While the United States does have the military capability act it alone if need be, conducting an operation within an alliance or coalition context provides two major advantages. The first is that the group of nations working together will generally be able to gain the moral high ground over their adversary, an important facet of the diplomatic and informational realms of the coercive campaign. The other advantage is that an alliance or coalition may be needed to provide additional military capability to complement that of the United States. While unlikely, it is not difficult to visualize a case where United States is fully engaged in a Major Theater War in one part of the world, and is then called upon to conduct military action in another. The assistance of alliance or coalition partners would then become critical to the eventual success of both campaigns. Finally, the United States, in general, almost never fights without allies.

anywhere in a short period of time, this does not happen overnight. If the U.S. must deploy its forces to a conflict, it will take some time to accumulate combat power in a region, potentially forcing the air campaign to take on a graduated nature, at least in the beginning.

Finally, U.S. national politics may drive the requirement for a campaign to be graduated. This may take the form of a desire to minimize the damage to a local population's infrastructure with an eye towards post-conflict relations. Or national decision-makers may wish to use minimal force to ensure that domestic opinion remains in favor of the war. While national decision-makers may find these reasons to be politically expedient, it makes it difficult for the military to plan and execute the campaign in the most militarily effective manner.

The future may bring other reasons why national decision-makers may decide that a graduated campaign is necessary. The point to take away from this is that the military will always be constrained by political restrictions, and that these may increasingly dictate that the military conduct its part of the coercive campaign in a graduated manner.

The second, and perhaps most important, reason for reexamining gradualism is that the apparent success of Operation Allied Force suggests that the failure of gradualism in Rolling Thunder may have been an aberration in the graduated use of military force. What if other factors unrelated to gradualism doomed Rolling Thunder to failure, and the concept is in fact likely to succeed in future conflicts? This question, coupled with the assertion that the strategic context may force the military to conduct graduated campaigns in the future, whether they like it or not, makes it important to study the theory of gradualism, as well as the lessons from its execution in the past, to learn what went wrong and how the theory and application of gradualism can be improved. Moreover, since coercion is a strategy where the military instrument is only one of many levers that national decision-makers can use to persuade an adversary, and the coordination of these levers is often critical, then the national decision-makers also have a role in establishing the necessary conditions for airpower to be used successfully in a graduated manner. The main research question, then, is what conditions must national decision-makers and airpower leadership establish or avoid in order to maximize the chances of success of a graduated air campaign?

Research Design

This thesis will answer the research question by following a methodology for critical analysis advocated by Dr. Harold R. Winton, a professor at the Air Force's School of Advanced Airpower Studies, called the "Updated Synthesis of Clausewitz on Theory."[4] In Winton's view, the examination of theory is an iterative process. After gaining a firm grounding in the theory, a critic compares the theory with criticism and experience, with experience consisting of looking at the past (history), the present (contemporary experience and explanatory constructs), and the future (from the critic's own imagination). The critic will then reach a judgment about the theory's efficacy and change the theory as necessary based on his analysis.[5]

Using this model as the point of departure for this study, the first task will be to gain a firm understanding of gradualism's theoretical basis. It should then be possible to examine the lessons of Operation Rolling Thunder within the construct of the theory. But Rolling Thunder provides only a limited evidentiary basis for assessing the efficacy of gradualism. Because of this, another major task is finding further evidence with which to compare these claims. Finally, after analyzing all of the evidence, it should be possible to modify the theory of gradualism, and in the process, derive conditions that national decision makers and military commanders must establish or avoid to maximize the probability of success for the graduated use of airpower.

Chapter Two begins, then, with an examination of the theory of gradualism. This examination is based on the ideas of perhaps the best-known theorist on the concept of gradualism, Thomas Schelling. As one of the defense intellectuals who rose to prominence in the 1950s, Schelling encapsulated his ideas on compellence and gradualism in *Arms and Influence*. These ideas emerged in the Johnson administration's policy planning cells for Rolling Thunder. This chapter examines Schelling's ideas about gradualism and deductively derives propositions for the theory.

The next step is to examine Rolling Thunder. But before one can competently examine the operation, one must understand the circumstances that Presidents Kennedy

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[4] See Carl von Clausewitz, "Critical Analysis," in *On War*, Michael Howard and Peter Paret ed. and trans. (Princeton, N.J.: Princeton University Press, 1976), 156-169.
[5] Dr. Harold R. Winton, unpublished lecture notes, SAAS 600, *Foundations of Military Theory,* Lesson 3, 19 August 1999.

and Johnson faced as they tried to find a solution to the deteriorating situation in South Vietnam. Chapter Three examines the contextual elements that helped shape the decision to implement a graduated campaign, as well as the influence these elements exerted on the execution of this operation. After examining the reasons why gradualism resonated with senior members of the Johnson administration, the chapter concludes with a primer on Operation Rolling Thunder and the circumstances that led up to its implementation.

With this background, it is now possible to critique the theory objectively. Chapter Four critiques gradualism from the theoretical perspective, first by comparing the theory of gradualism to the military theory of Carl von Clausewitz. It will be readily apparent that while Clausewitz and Schelling both believe in the primacy of politics over war, they have radically different, and contradictory, views about the least expensive way to achieve the political objective. Following this, gradualism will be measured against airpower theories, the first being the "classical" airpower theories of Giulio Douhet, William Mitchell, and the U.S. Army Air Corps Tactical School. This examination will show that the early airpower theorists believed that airpower was particularly well suited to apply Clausewitz's principles of concentration, economy of force, and surprise. The chapter continues by examining the modern airpower theory of strategic paralysis, proposed by the late John Boyd and by John Warden, and will show that strategic paralysis and gradualism are almost theoretically contradictory with respect to the mechanisms through which their theorists expect to achieve the objective. The examination of prominent military and airpower theories will demonstrate why most military practitioners are so averse to gradualism. The chapter concludes by comparing gradualism to the psychology of decision making and the psychological impact of an air attack. This analysis demonstrates that airpower's inherent coercive effects can be misapplied if airpower is used in a graduated manner.

Following this will be the critique of gradualism based on history. Chapter Five begins with a derivation of three analytical criteria, based on the propositions of gradualism from Chapter Two, to examine the evidence of Rolling Thunder. Then, to broaden the evidence base, Chapter Six examines, within the same analytical construct, two other air campaigns that were also graduated in nature. These are the Arab-Israeli War of Attrition, 1969-70, and NATO's Operation Deny Flight and Deliberate Force,

1992-95. While military commanders did not intend it, circumstances drove these air operations to be graduated in nature. Chapter Seven analyzes the lessons about gradualism that emerge from these three campaigns, and proposes modifications to gradualism's theoretical propositions. Finally, Chapter Eight recommends a number of conditions to national decision-makers and air commanders to establish or avoid to maximize the chances for a successful graduated air campaign.

CHAPTER TWO

THE THEORY OF GRADUALISM

[Theory] is meant to educate the mind of the future commander, or, more accurately, to guide him in his self-education, not to accompany him to the battlefield; just as a wise teacher guides and stimulates a young man's intellectual development, but is careful not to lead him by the hand for the rest of his life.

Carl von Clausewitz

Introduction

Gradualism became notorious after its implementation as a strategic concept in the Vietnam War, and in Operation Rolling Thunder in particular.[6] Chapter Three will examine this implementation in detail. The idea of "slowly turning the screw" is anathema to most military officers versed in both the principles of war and the idea that the best way to win a battle is to hit the enemy with everything you have at the outset of the fight. Because of this notoriety, most officers immediately write off gradualism as a failed concept. As a result, contemporary strategists do not have a full understanding of the theory, much to the detriment of those who must apply it today.

This chapter will outline the theory of gradualism. It will first examine the theories of limited war, of which gradualism is a part, that civilian academics and defense intellectuals promoted in the 1950s. Understanding the context of how these ideas evolved is key to comprehending gradualism. After that will follow an in-depth examination of Thomas Schelling's ideas of compellence. In Schelling's view, the "ideal" compellent campaign is a graduated one. The conditions necessary for a successful compellent campaign will then be explored. The final section of the chapter will propose a definition and propositions for the theory of gradualism.

Limited War Theories

The dawn of the nuclear age, which came with the dropping of the atomic bombs on Japan in August 1945, began a dramatic change in thinking about defense strategy,

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[6] See, for instance, Harry G. Summers in *On Strategy: The Vietnam War in Context* (Carlisle Barracks, Pa.: U.S. Army War College Strategic Studies Institute, 1981), 72-3; General William W. Momyer, *Airpower in Three Wars* (Washington D.C.: Department of the Air Force, 1978), 17-8, 339; and Admiral U. S. G. Sharp, *Strategy for Defeat: Vietnam in Perspective* (Novato, Calif.: Presidio Press, 1978), 217, 268-9.

although few fully anticipated this at the time. For the first time, a nation had the capacity to destroy an entire city with just one bomb. Many believed that atomic weapons, simply through the threat of the terrible destruction they could inflict on an adversary, could replace conventional military forces. As the belief in the value of atomic weapons as a deterrent to Soviet expansion grew, the U.S. Air Force immediately jumped at the chance to increase its importance within the defense establishment and expand its force structure, as the military service that could best deliver nuclear weapons to targets inside the Soviet Union.[7]

With the Korean armistice in 1953, the Eisenhower administration began looking for a different approach. President Eisenhower opposed Truman Administration foreign policy on three grounds. He was concerned that the American people, weary of the sacrifices required for internationalism, would turn isolationist. Moreover, Eisenhower and his team viewed large military expenditures as being unproductive in peacetime. And related to this was their belief that unrestricted federal spending could hurt the United States' greatest strength in its confrontation with communism: the American economy.[8] Guided by this view, Eisenhower sought to balance the federal budget by slashing defense spending and increasing American reliance on nuclear weapons as the way to get the greatest firepower for limited defense dollars.

Having decided to rely on the United States' superiority in nuclear weapons, the Eisenhower administration promulgated a new strategic doctrine, the idea of "massive retaliation." In a speech before the Council on Foreign Relations, on January 12, 1954, Secretary of State John Foster Dulles announced the United States' new defense policy. Recognizing the United States' nuclear superiority, Dulles declared that "the way to deter aggression is for the free community to be willing and able to respond vigorously at places and with means of its own choosing." Dulles concluded by stating that the United

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[7] For a description of the Air Force's focus on becoming the sole nuclear arm in the national security strategy of the time, see Walton S. Moody, *Building the Strategic Air Force* (Washington, D.C.: Brookings Institution, 1978).

[8] John Lewis Gaddis, *Strategies of Containment: A Critical Appraisal of Postwar American National Security Policy* (New York: Oxford University Press, 1982), 133-4.

States would depend on the "deterrent of massive retaliatory power" to react to any foreign aggression.[9]

Massive retaliation and the reliance on nuclear weapons gave further impetus to a trend that was already occurring in the military force structure. The Air Force, recognized as the military service that could best deliver nuclear weapons at the time, was enjoying a significant increase in its share of the Defense Budget, even before Eisenhower adopted massive retaliation. This trend increased after 1954 in light of Eisenhower's desire to balance the budget. As a result, Strategic Air Command (SAC) grew to dominate the Air Force. Furthermore, despite the experience of Korea that further demonstrated the importance of tactical airpower, Tactical Air Command (TAC) languished through a lack of funds and institutional interest. To regain some of its lost funding, TAC acquired nuclear fighter-bombers in order to support theater commanders if a limited nuclear war was to occur. As will be shown in Chapter Five, the Air Force's wholesale adoption of platforms optimized for the delivery of nuclear weapons would play an important role in its performance in Vietnam.

Strategic thought in the 1950s evolved in response to the policy of massive retaliation. During these years, a number of civilian theorists, either academics or members of defense think tanks such as the RAND Corporation, built theories that still figure prominently in strategic thought today. These ideas include the interrelated concepts of deterrence, limited war, flexible response, nation building and counter insurgency, crisis management, and controlled escalation. While these are separate concepts, two themes tie them together. The first is that foreign policy challenges could be tamed by analyzing them through a rational process; the second is the idea that "the exercise and threat of the exercise of force be subject to close political control." What these theorists envisioned is that politicians could fine-tune both the threat and the use of military force.[10] While all these theories are important, the closer examination of three of them, flexible response, crisis management, and controlled escalation provides key insight into gradualism.

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[9] See John Foster Dulles, "The Evolution of Foreign Policy," *The Department of State Bulletin,* January 25, 1954, 108.

[10] Colin S. Gray, "What RAND Hath Wrought," *Foreign Policy* 4 (Fall 1971), reprinted in *Military Review* 52, no. 5 (May 1972), 23.

Flexible response was a reaction to massive retaliation. As the perception grew that the Soviet Union was gaining parity with the United States in nuclear weapons, defense intellectuals began to conclude that the United States could no longer rely on its nuclear arsenal to provide a credible deterrent . If the deterrent power of the nuclear umbrella was no longer effective, then one of the key conclusions of massive retaliation, namely that United States would no longer need a strong conventional military force to counter that of the Soviet Union, was no longer valid. As a result, flexible response called for increasing the options available to national decision-makers beyond simply launching a massive nuclear strike.[11]

In perhaps the best codification of the idea of flexible response, Maxwell Taylor, in his work *The Uncertain Trumpet,* outlines his proposals for a National Military Program of Flexible Response. According to Taylor, such a program should begin with an "unqualified renunciation of reliance on the strategy of Massive Retaliation. It should be made clear that the United States will prepare itself to respond anywhere, any time, with weapons and forces appropriate to the situation."[12] To accomplish this, Taylor called for four "quick fixes" to mitigate what he saw as weaknesses in the United States' military. The most significant of these was improved planning and training for limited war to remedy the state of unpreparedness to which the country's conventional forces had fallen to in the 1950s, due to the Eisenhower Administration's emphasis on strategic nuclear forces.[13]

Taylor's ideas did not go unnoticed. Senator John F. Kennedy read Taylor's book before he declared his candidacy for the presidency in 1959, and it had a profound effect on Kennedy's eventual defense policy. Furthermore, Kennedy developed a close relationship with Taylor, based on "mutual respect and great affection."[14] It was this mutual respect, in part, that led Kennedy to name Taylor as his Military Representative to the President in 1961 and as Chairman of the Joint Chiefs of Staff in 1962.

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[11] See Fred Kaplan, "The Limited War Critique," in *The Wizards of Armageddon* (New York: Simon & Schuster, 1983), 185-200.

[12] Maxwell Taylor, *The Uncertain Trumpet* (New York: Harper & Brothers, 1959), 146.

[13] *Ibid.,* 139. Taylor's other quick fixes included the exploitation of the mobile intermediate range ballistic missile, better protection for SAC, and a limited fall-out shelter program.

[14] H.R. McMaster, *Dereliction of Duty: Lyndon Johnson, Robert McNamara, The Joint Chiefs of Staff, and The Lies That Led to Vietnam* (New York: HarperPerennial, 1997), 11.

The concept of flexible response, as espoused by Maxwell Taylor, quickly became part of the defense policy of the United States. But it was not the only new theory that became interwoven into American defense policy. Perhaps the most critical test that the Kennedy Administration faced was the Cuban Missile Crisis, in October 1962. The administration's success in coercing Soviet leader Nikita Khrushchev to back down in the crisis led limited war theorists, such as Albert and Roberta Wohlstetter, Harlan Cleveland, and Alastair Buchan, to write about how to manage crises effectively.[15] Harlan Cleveland paints an optimistic, if naïve, view of crisis management: "The management of a foreign-policy crisis, then, is an exciting, demanding form of organized thinking, in which the maximum degree of complexity must be sifted through the minds of those few men in position to take the ultimate responsibility for action."[16] As one analyst has summarized, these theorists emphasized "the need for clear and limited objectives, the value of resolve, the virtue of a gradual increase in the pressure applied, and the absolute necessity for rapid interadversary communication."[17]

But strategic theorists were not the only ones drawing lessons from the missile crisis. Robert S. McNamara, Secretary of Defense for both Presidents Kennedy and Lyndon B. Johnson, learned many lessons from his role in the crisis. One of these was the importance of centralized control in any crisis management situation. Since the use of force in these high-stakes situations could result in quick escalation to dangerous levels of confrontation, it was critical that a central authority in Washington, preferably the President, should control the use of military force in a crisis.[18] A related lesson that McNamara took from the Cuban Missile Crisis was the idea of controlled escalation: the value of slowly increasing the pressure on the adversary. McNamara concluded that one could use a strategy of graduated response to not only control the escalation of a crisis, but also to communicate with the adversary.[19]

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[15] See Albert and Roberta Wohlstetter, *Controlling Risks in Cuba, Adelphi Paper* 17 (London: The Institute for Strategic Studies, April 1965); Harlan Cleveland, "Crisis Diplomacy," *Foreign Affairs* 41, no. 4 July 1963): 638-649; and Alastair Buchan, *Crisis Management: The New Diplomacy* (Paris: The Atlantic Institute, April, 1966).

[16] Cleveland, 639.

[17] Gray, 26.

[18] Robert S. McNamara, "Cuba Briefing, Part II," 24 January 1963, as cited in McMaster, 96.

[19] McMaster, 62.

Perhaps the best-known theorist of controlled escalation was Herman Kahn, a former RAND analyst. In his work *On Escalation: Metaphors and Scenarios,* Kahn noted that escalation

> is used to facilitate negotiations or to put pressure on one side or both to settle a dispute without war. If either side wanted a war, it would simply go to war and not bother to negotiate…Neither side is willing to back down, precisely because it believes or hopes it can achieve its objectives without war. It may be willing to run some risk of war to achieve its objective, but it feels that the other side may back down or compromise before the risk becomes very large.[20]

He continued by noting that escalation is analogous to the game of chicken: both sides run the same risk, each hoping that the other will back down first.[21]

Kahn used the metaphor of a ladder to categorize the different "rungs" for escalation, identifying forty-four rungs ranging from the low end (Ostensible Crisis) to the high (Spasm or Insensate Attack). Theoretically, a decision-maker, aware of such a construct, would be able to move a crisis deliberately from one rung to another.[22] This construct would, in theory, be of great use to a decision-maker in managing a crisis. Of course, reality does differ from theory. While it is possible to envision different thresholds for escalation, these may not exist in reality, either because the variables of the actual situation do not conform to those in theory, or because the adversary does not share the same conception of the ladder of escalation.[23]

The ideas and concepts of the limited war theorists had a tremendous impact on the strategic thought of U.S. national security policy makers of the 1960s. The goal of making war a more *rational* phenomenon, subject to man's intellectual control, seemed to be within reach. The influence of these ideas was so great that for Kennedy, Johnson, and their civilian advisors, "Strategy was primarily a matter of sending signals to foes, of communicating resolve, of using military force in a carefully calibrated way to deter enemies or bargain toward a negotiated settlement."[24] With this understanding of the intellectual growth of limited war theories, the next part of this chapter examines, in-

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[20] Herman Kahn, *On Escalation: Metaphors and Scenarios* (New York: Frederick A. Praeger, 1965), 12.
[21] *Ibid.,* 12.
[22] *Ibid.,* 37-51.
Gray, 26.

depth, one particular concept: the notion of gradualism.

Schelling's Concept of Gradualism

The best known theorist of gradualism is Harvard-trained economist Thomas Schelling. His ideas about gradualism are not explicit: in fact, he never defined the term in any of his writings.[25] Rather, one must mine these ideas through an examination of his thoughts on coercion and compellence, as well as his ideas on bargaining and communication. As will be seen, a well-executed compellent campaign, according to Schelling, will be graduated in nature.

Schelling defines compellence as "*inducing* [an adversary's] withdrawal, or his acquiescence, or his collaboration by an action that threatens to hurt, often one that could not forcibly accomplish its aim but that, nevertheless, can hurt enough to induce compliance."[26] Key to comprehending this conception of compellence is understanding Schelling's view of the use of military power. Until the Second World War, the traditional goal of military power was simply to destroy an enemy's ability to wage war, either by attacking his fielded forces or his military industrial complex. However, Schelling argues that military power can be used to attack an adversary's interests: "the coercive use of power to hurt…is the very exploitation of enemy wants and fears…brute force succeeds when it is used, whereas the power to hurt is most successful when held in reserve. It is the *threat* of damage, or of more damage to come, that can make someone yield or comply."[27]

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[24] George C. Herring, "'Cold Blood': LBJ's Conduct of Limited War in Vietnam," in *An American Dilemma: Vietnam, 1964-1973,* ed. Dennis E. Showalter and John G. Albert (Chicago, Ill.: Imprint Publications, 1993), 65.

[25] Thomas C. Schelling, e-mail to author, 6 April 2000.

[26] Thomas C. Schelling, *Arms and Influence* (New Haven, Conn.: Yale University Press, 1966), 79-80. Emphasis in original. Compellence is one of two concepts within Schelling's construct of coercion, the other is deterrence. Schelling defines deterrence as "to turn aside or discourage through fear; hence, to prevent an action by fear of consequences." Schelling, 71. To put it another way, deterrence attempts to prevent an adversary from taking a specific action; compellence persuades an adversary to take an action that he would not have otherwise taken, usually through the use, or the threat of the use, of force. Another concept closely related to compellence is Schelling's idea of forcible offense, "taking something, occupying a place, or disarming an enemy or a territory by some action that an enemy is unable to block." Schelling, 79. Both compellence and forcible action are offensive in nature, vice deterrence which is defensive. The main difference between the compellence and forcible offense is that in compellence, the goal is to get the adversary to cooperate; in forcible action, the goal is to do whatever you want to the adversary because he does not have the means to prevent it.

[27] *Ibid.*, 3. Emphasis in original.

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In his analysis, Schelling deductively derives five conditions necessary for coercion to be successful:

1. The two sides must have some mutual interests from which a bargain can be struck, i.e. it cannot be a zero-sum game.
2. The coercive threat must be sufficiently potent to convince the adversary of the costs of non-compliance.
3. The adversary must perceive the coercer's intent as credible.
4. The coercer must somehow assure the coercee that compliance will not result in further demands being placed on him.
5. The adversary must be given time to comply with the demands.[28]

An examination of these conditions provides further insight. Schelling notes at the beginning of *Arms and Influence* that "Diplomacy is bargaining; it seeks outcomes that, though not ideal for either party, are better for both than some of the alternatives." He adds that "there must be some common interest, if only in the avoidance of mutual damage, and an awareness of the need to make the other party prefer an outcome acceptable to oneself."[29] If the two sides do not share some common ground, coercion will not be possible.[30] This also assumes that that the coercer actually has a goal in mind and is not trying simply to punish an adversary as an end in itself.

Schelling's second and third conditions deal with perceptions. If the adversary does not perceive a coercer's threat to be powerful enough, then the coercive threat will not work. This implies that a weak country may be able to coerce a stronger adversary if it can pose a sufficiently powerful threat. The adversary's perception of the coercer's intent is equally important. If an adversary does not believe a coercer's intent to use force is credible, then the threat will be for naught. Countries that have a reputation for not following through on commitments, countries that do not have a history of using force offensively, or coalitions that are politically fractious may have difficulties persuading an adversary of the credibility of their intent.

Furthermore, an adversary has little incentive to comply with coercive demands if it believes that the coercer will only make new demands after the first conditions have been fulfilled. A coercing government may find it difficult to prove to an adversary in

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[28] Peter Viggo Jakobsen, "The Strategy of Coercive Diplomacy: Refining Existing Theory to Post-Cold War Realities," in *Strategic Coercion: Concepts and Cases*, ed. Lawrence Freedman (Oxford: Oxford University Press, 1998), 66.
[29] Schelling, 1.

advance that it will not impose further conditions unless the coercer has a reputation for following through on commitments or a third party that can enforce an agreement is brokering the deal.[31]

Finally, compellence is different from the traditional use of military force. In the traditional view, the goal is to destroy the enemy's military force and leave him no other choice but surrender. This implies that military action will be swift and devastating to ensure that the adversary's means of resistance are destroyed as quickly as possible. In compellence, the goal is to cause an adversary to make a decision to comply with your limited demands. Since the adversary must make a decision to comply, he must be given time to do this. According to Schelling, "decisions depend on political and bureaucratic readjustments; and it may especially take time to arrange a mode of compliance that does not appear too submissive; so diplomacy may dictate a measured pace."[32] This idea of diplomacy dictating the pace of military action, and that this pace may result in military operations that are deliberately not quick and decisive, is contrary to traditional military theory, as will be shown in Chapter Four.

After examining the conditions necessary for successful coercion, Schelling describes the ideal compellent action as

> one that, once initiated, *causes minimal harm if compliance is forthcoming and great harm if compliance is not forthcoming*, is consistent with the time schedule of feasible compliance, is beyond recall once initiated, and cannot be stopped by the party that started it but automatically stops upon compliance, with all this fully understood by the adversary.[33]

In other words, Schelling's ideal compellent campaign is graduated in nature.

A Theory of Gradualism

Schelling's ideas about gradualism are embedded in his ideas about compellence and bargaining.[34] Despite the fact that his elaboration of compellence in *Arms and*

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[30] Schelling admits that his theory breaks down if the two sides do not share mutual interests. Schelling, *Strategy of Conflict* (Cambridge, Mass.: Harvard University Press, 1960), 15.

[31] Schelling, *Arms and Influence,* 74-5.

[32] *Ibid.*, 172.

[33] *Ibid.*, 89. Emphasis added.

[34] Several scholars have attempted to "operationalize" Schelling's ideas of compellence to make them more usable to policy makers. Some of the more recent works include Alexander L. George and William E. Simons, ed., *The Limits of Coercive Diplomacy,* 2d. ed. (Boulder, Colo.: Westport Press, 1994); Peter

Influence is sometimes inexplicit and that he never explicitly mentions gradualism in any of his works, it is possible to distill a definition of gradualism and derive four propositions for a theory of gradualism. Gradualism, in the military context, is the incremental increase of the application of military force, coupled with a threat to use this force against targets an adversary values, with the goal of compelling an adversary to accede to the coercer's demands. The central proposition for gradualism is: "The power to hurt is bargaining power. To exploit it is diplomacy—vicious diplomacy, but diplomacy."[35] The key to gradualism is the power to hurt and, by threatening to hurt what an adversary holds dear, making him concede to your demands.

There are three other propositions to the theory of gradualism:

1. Since bargaining is a key aspect of compellence and gradualism, a graduated campaign must necessarily be controlled at the highest level
2. If threatening harm to what an adversary values is a key tenet, then the coercer must have appropriately intensive and extensive knowledge of the adversary
3. If bargaining is a key facet of gradualism, clear, if tacit, communication between the adversaries is a critical component of gradualism

Let's examine these closely. In a graduated campaign, the goal is not to destroy the adversary, but to bend him to your will. Since gradualism can minimize the amount of destruction necessary to compel the adversary, and since destruction is not the goal, gradualism can be an efficient way to coerce. Moreover, since part of the graduated campaign involves bargaining with the adversary through diplomacy, centralized control of both diplomatic and military efforts at the highest level is necessary to ensure this efficiency.

Furthermore, Schelling notes that if a coercing government intends to threaten to punish an adversary through the use of force, "one needs to know what an adversary treasures and what scares him."[36] This has two consequences. First, if the adversary values nothing more than the goal that he is trying to achieve through non-compliance, it may be difficult or impossible to compel him to comply. And second, if the coercer is

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Viggo Jakobsen, *Western Use of Coercive Diplomacy After the Cold War* (New York: St. Martin's, 1998); and Lawrence Freedman, ed., *Strategic Coercion: Concepts and Cases*.

[35] Schelling, *Arms and Influence,* 2.

[36] *Ibid.,* 3.

not able to determine what the adversary treasures, it will be difficult to hold it hostage, thus making it difficult to effectively threaten to inflict pain.

Finally, as can be seen from the first four conditions that are necessary for coercion to succeed, as elaborated in the previous section, clear communication between the two sides is critical. But the importance that Schelling attaches to interadversary communication is even greater than what can be inferred from *Arms and Influence*. Schelling began his professional life as a trade negotiator and he learned a great deal about the art of bargaining from these experiences.[37] In an earlier work, *The Strategy of Conflict,* he elaborated these ideas, noting that "in the strategy of conflict there are enlightening similarities between, say, maneuvering in limited war and jockeying in a traffic jam, between deterring the Russians and deterring one's own children, or between the modern balance of terror and the ancient institution of hostages."[38] The bargaining that Schelling speaks of here is often uncommunicated, or tacit, bargaining; this tacit bargaining may be at least as important as explicit communication. It follows, then, that if one government is trying to communicate tacitly with an adversary through the use of the military instrument, the instrument must be sufficiently precise, and wielded with sufficient dexterity, to be able to communicate effectively the message that the coercer wants the adversary to receive.

Conclusion

Gradualism presents an attractive and rational theory to a national policymaker. By threatening to strike what an adversary holds dear, it should be a simple, if not necessarily easy, matter to compel him to comply with one's wishes. And equally as important, gradualism implies that a compellent action using the military instrument can be relatively inexpensive, both politically and financially.

As with most theories, however, there is a large gulf between what makes sense on paper and what actually occurs in reality. To comprehend the reality in which this theory was originally applied, the historical context of gradualism's application in Vietnam must be understood. President Johnson's advisors, steeped in the rational theories of limited war and flushed with success from the management of the Cuban

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[37] Kaplan, 330.
[38] Schelling, *The Strategy of Conflict,* v.

Missile Crisis, believed that rational men could solve all international problems. The next chapter will examine this historical context.

CHAPTER THREE

GRADUALISM AND THE JOHNSON ADMINISTRATION

If a critic wishes to praise or blame any specific action, he will only partly be able to put himself in the situation of the participant. In many cases, he can do this well enough to suit practical purposes, but we must not forget that sometimes it is completely impossible.

Carl von Clausewitz

Introduction

When examining a complex historical matter, it is critical to have a firm appreciation of the contextual elements present at the time. By placing oneself in the same situation that the original decision-makers were in, to the greatest extent possible, the analyst will be able to understand many of the factors influencing an event. But, as Clausewitz admonishes, it is possible to reconstruct the decision-making environment only to a certain level of fidelity. To understand the complexities of the decision-making involved with Rolling Thunder and how gradualism was applied in this case, it is important to appreciate the context of the operation, not only within the events of the Vietnam War, but also within the context of the international and domestic situation that President Johnson and his advisors faced as they made these decisions.

To provide this context, this chapter will first briefly outline the international and domestic situation facing President Johnson by analyzing some of the key contextual elements. After that, it will briefly consider the characters and personalities of President Johnson and Secretary of Defense McNamara's and assess why they found gradualism so appealing. Finally, the chapter will conclude with a brief overview of Operation Rolling Thunder itself.

The Context

It is impossible to understand the decision to initiate sustained bombing of North Vietnam without appreciating the context in which President Johnson and his advisors made the decision. This section will examine the contextual elements that influenced President Johnson and his advisors as they made their fateful decisions leading to military intervention in Vietnam.

The Soviet Union and the Cold War

The first and possibly most important contextual element that LBJ and his advisors faced during this period was the United States' relationship with the Soviet Union. President John F. Kennedy entered office in January 1961 at the height of the Cold War with Soviet Union. The Soviets, under Nikita Khrushchev, repeatedly seized opportunities to escalate international tensions to the brink, such as in 1961 when they erected the Berlin Wall. The Kennedy Administration viewed Khrushchev's objective for these moves as "a display of power sufficient to frighten the West into accepting a relaxation of tensions …"[39] Despite this, both Kennedy and Johnson were greatly concerned about these situations and were determined to avoid a confrontation with the Soviets because they did not know when a conflict might escalate uncontrollably to nuclear war.[40]

Moreover, foremost in the minds of the Johnson administration when they were making policy regarding Vietnam was the close call the Kennedy administration had experienced with the Soviets during the Cuban Missile Crisis in October 1962.[41] While Washington persuaded the Soviets to withdraw their nuclear warheads and missiles from Cuba without the use of force, the crisis did almost escalate to military action.[42]

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[39]John Lewis Gaddis, *Strategies of Containment: A Critical Appraisal of Postwar American National Security Policy* (New York: Oxford University Press, 1982), 207.

[40] Robert S. McNamara, *et al.*, *Argument Without End: In Search of Answers to the Vietnam Tragedy* (New York: PublicAffairs, 1999), 27-28; 158-9.

[41] Johnson retained Kennedy's national security team after Kennedy's assassination in November, 1963.

[42] An anecdote from *Argument Without End* illustrates this uncertainty and its attendant danger. McNamara relates a conversation that he had with Cuban President Castro thirty years after the Missile Crisis. Castro claims that, had the United States invaded Cuba as McNamara and the National Security team came close to recommending to Kennedy, he would have given permission to the Soviets to use tactical nuclear warheads on the invading forces despite the risk that this posed to Cuba. McNamara declares that the Kennedy team was not aware of this. This demonstrates the danger of nuclear decision-making in an environment of bounded rationality. McNamara concludes that "no one should believe that had American

With the memories of the Cuban Missile Crisis still fresh, the Johnson administration believed it had to walk a fine line to avoid any military confrontation with the Soviet Union.

The Chinese Variable

A contextual element that influenced Johnson administration decision-making almost as much as the Soviet Union was the Chinese Communist government. Johnson and his national security team believed that China, with its common border with Vietnam and its apparent status as Hanoi's patron, would come to North Vietnam's assistance if the United States acted too forcefully against the North. Furthermore, Johnson's advisors, as lower-level officials in the Truman Administration, would have painfully recalled the threat and the precedent of the Chinese intervention on behalf of their North Korean allies some fifteen years earlier. Given this history, President Johnson and his advisors were naturally concerned about another Chinese intervention, along with the possibility that their actions might lead to a situation that could escalate to an U.S.-Soviet nuclear exchange.[43]

But where was the threshold that, if crossed by the U.S., would trigger a Chinese intervention? This was not known at the time and there was much discussion within the administration about this, without much consensus. The Joint Chiefs of Staff disagreed amongst themselves on this issue. Some of the Chiefs believed that the Chinese would not intervene at all, and others could not agree when the intervention might occur.[44] McNamara himself was against airstrikes early in the process because of his concern about Chinese retaliation.[45] While many have criticized the Johnson Administration, *ex post facto,* for their cautious stance regarding the Chinese,[46] it is difficult to see how

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troops been attacked with nuclear weapons the U.S. would have refrained from a nuclear response." McNamara, 10-11.

[43] The Kennedy Administration initially believed that Moscow was backing the Viet Cong insurgency; they based this on Khrushchev's 1961 Wars of National Liberation speech. By 1964, Johnson's team assessed that Beijing bore the major responsibility. Gaddis, 249-50.

[44] H.R. McMaster, *Dereliction of Duty: Lyndon Johnson, Robert McNamara, The Joint Chiefs of Staff, and The Lies That Led to Vietnam* (New York: HarperPerennial, 1997), 148-149.

[45] Robert S. McNamara with Brian VanDeMark, *In Retrospect: The Tragedy and Lessons of Vietnam* (New York: Times Books, 1995), 114-115.

[46] See, for instance, A. L. Gropman, "The Air War in Vietnam, 1961-1973," in *War in the Third Dimension: Essays in Contemporary Air Power*, ed. Air Vice Marshall R.A. Mason (London: Brassey's

Johnson could have done anything different, short of not getting involved at all, given the concern about avoiding nuclear war, the precedent of Chinese actions in the Korean War, and the lack of clarity regarding Beijing's intentions about intervening in Vietnam.[47] As will be demonstrated, the option of not getting involved was not viable because of domestic political considerations.

The Strategy of Containment

The United States' grand strategy in the early 1960s centered on containment. First articulated by George Kennan in his famous "Mr. X" article in *Foreign Affairs* in July 1947, containment was the idea that the West, led by the United States, must act to prevent the expansion of communism by meeting it at every point where it tried to spread. Under President Truman, containment manifested itself in economic and military terms as the Marshall Plan, the Truman Doctrine, and the U.S. intervention in the Korean War. For President Eisenhower and his New Look policy, containment embodied the concept of an asymmetrical response: the U.S. would respond to aggression, but with the means and at the intensity of its choosing.[48] This policy became better known as massive retaliation, as was discussed in Chapter Two.

Soviet leadership, however, quickly realized that massive retaliation was not credible. This was due to the increases in their own nuclear arsenal, along with their perception that if Washington were presented with a threat that did not place the United States' vital interests at stake, the United States would not launch a massive retaliatory strike. With the spread of revolutionary movements throughout the world as European

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Defence Publishers, 1986), 35; and Harry G. Summers, *On Strategy: The Vietnam War in Context* (Carlisle Barracks, Pa.: U.S. Army War College Strategic Studies Institute, 1981), 37.

[47] Post-Vietnam scholarship is beginning to reveal Beijing's intentions regarding intervention. McNamara asserts that the North Vietnamese were concerned that certain U.S. actions, such as bombing near the North Vietnam-Chinese border or a land invasion north of the 17th parallel, would have provoked a Chinese intervention. McNamara, *Argument,* 177. Other scholarship paints a slightly different view. Xiaoming Zhang states that a full U.S. ground invasion of North Vietnam would have forced Hanoi to request Chinese intervention, which Beijing would have been obliged to provide. However, he asserts that Beijing would have intervened more to protect its own strategic interests than to protect an ally. Finally, while Beijing did assist Hanoi militarily during the conflict, it also went out of its way to ensure that a U.S.-Sino confrontation did not occur. Xiaoming Zhang, "The Vietnam War, 1964-1969: A Chinese Perspective," *The Journal of Military History* 60, no. 4 (October 1996): 731-62. John Mueller asserts that the threat of Chinese intervention in the Vietnam conflict decreased after 1965 and the beginnings of the Cultural Revolution. Of course, the Cultural Revolution began after Rolling Thunder. See John Mueller, *Retreat from Doomsday: The Obsolescence of Major War* (New York: Basic Books, Inc., 1989), 178.

[48] Gaddis, 151.

colonialism declined, Khrushchev saw an opportunity and declared Soviet support for all wars of national liberation.[49]

It was within this context that the Kennedy and Johnson Administrations deliberated about what to do in Vietnam. During this period, Washington did change its view about the main source of Viet Cong support; but either way, Washington believed that if it did not assist Saigon in quelling the insurgency, not only would it lead to the fall of South Vietnam, but it would also threaten the other countries in Southeast Asia, as predicted by the domino theory. As a result, Kennedy and Johnson believed they had no option other than to assist Saigon, initially with aid and advisors. As Saigon's ability to handle the insurgency deteriorated, the Johnson administration believed that the only viable option was direct U.S. military involvement in the conflict.

Perception of U.S. Credibility

Closely linked to the fear of falling dominoes in Southeast Asia was the Kennedy and Johnson administrations' concern about damage to U.S. credibility worldwide if Washington allowed South Vietnam were to fall to the Viet Cong. This belief was tied to the U.S. commitment to defend "the free territory under the jurisdiction of the State of Vietnam." President Eisenhower pledged the U.S. to this when he signed the South East Asia Treaty Organization (SEATO) protocol in 1954; the U.S. commitment to defend South Vietnam against an insurgency was ambiguous, however.[50] But within the context of East-West competition, the Kennedy and Johnson administrations believed that the credibility of U.S. commitments to defend its NATO allies in Europe was crucial. While Kennedy and Johnson's primary concern was maintaining U.S. credibility in Europe and NATO, they were also anxious about how other Third World countries might perceive such a loss and the resulting damage to U.S. credibility to keep its commitments.[51] This fear of the loss of U.S. credibility is reflected in numerous documents that the two Administrations wrote concerning the problem in Vietnam.[52]

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[49] Nikita S. Khrushchev, "On Wars of National Liberation," January 6, 1961.

[50] Gaddis, 239.

[51] For a history of Washington's struggle for credibility with Europe, see David N. Schwartz, *NATO's Nuclear Dilemmas* (Washington, D.C.: The Brookings Institution, 1983).

[52] For instance, see John T. McNaughton, Memorandum for Secretary of Defense Robert S. McNamara, "Annex—Plan for Action for South Vietnam," 24 March 1965, in *Pentagon Papers as Published by the New York Times* (hereafter referred to as *Pentagon Papers)* (New York: Bantam Books, 1971), 434.

Domestic Considerations

The final contextual element was the domestic U.S. political environment that had two facets. First, President Johnson's two primary goals after becoming president in late 1963 were to win the presidency in his own right in 1964 and then, after getting elected, to persuade the Congress to approve his ambitious domestic agenda, dubbed The Great Society.[53] He believed that if the Vietnam War exploded on the American political scene, it would ruin any chance he had of getting his legislative agenda through Congress.[54] The goal of minimizing the potential damage that Vietnam might cause to his domestic agenda influenced Johnson in his decisions about whether to intervene in Vietnam and, later on, about how to do it.

The second domestic political consideration influencing Johnson was the backlash that he expected if South Vietnam fell to the Communist insurgency. As a member of Congress in the late 1940s, Johnson was all too familiar with the "who lost China?" debates and recriminations that raged throughout Washington after 1949. Having seen the damage this caused to the Truman Administration, as well as the ensuing advent of McCarthyism in the early 1950s, Johnson desperately wanted to avoid a repetition of this problem.[55]

It is impossible to precisely assess the influence that these five contextual elements had on the decision-making of the time. Even with the benefit of memoirs from some of the principals, the influence can only be cautiously surmised since memoirs, influenced by ego and based on hindsight and imperfect memory, are not always reliable. Still, it is safe to conclude that all these forces drove the Johnson administration toward their decision to intervene and, more importantly, influenced their choice of means to do it.

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[53] McMaster, 326; Doris Kearns, *Lyndon Johnson and the American Dream* (New York: Harper & Row, 1976), 282-3.

[54] Kearns, 282-3.

[55] Kearns, 282. Robert Gallucci asserts that Johnson's fear that the Democratic Party might again be accused of being "soft on communism" drove him unintentionally to limit the policy options for Vietnam. Robert L. Gallucci, *Neither Peace Nor Honor: The Politics of American Military Policy in Viet-nam* (Baltimore, Md.: The Johns Hopkins University Press, 1975), 43.

<center>**Gradualism in the Johnson Administration**</center>

An examination of how President Johnson and his Administration viewed the concept of gradualism is best conducted in three parts. The first part looks at how the idea came to influence members of the Administration. The second and third parts look at how Johnson and McNamara came to embrace the concept and why they found it so appealing.

How Gradualism Entered the Administration

As Chapter Two illustrated, members of the Kennedy and Johnson Administrations were influenced by the defense intellectuals who worked in academia and at RAND in the 1950s, some of whom assumed positions within the Administration. Thomas Schelling, the best known theorist of gradualism, was one of these. When President-elect Kennedy named Paul Nitze as his Assistant Secretary of Defense for International Security Affairs, Nitze offered Schelling a job as his arms control deputy.[56] Schelling declined the position, but recommended a friend, John McNaughton, a professor at Harvard Law School. McNamara and McNaughton got along very well, and McNaughton quickly rose in the ranks of the Office of the Secretary of Defense. In the fall of 1963, after Nitze became the Secretary of the Navy, McNaughton moved into Nitze's old office as the head of International Security Affairs.[57]

As the situation in Vietnam deteriorated, McNamara asked McNaughton to propose some options for how to deal with the problem. McNaughton turned to Schelling's limited war theories.[58] The influence of Schelling's ideas about gradualism can be seen in the memoranda and position papers that McNaughton drafted for McNamara and the interagency memoranda written for the President:

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[56] At the time, Schelling was better known for his work on nuclear arms control. Fred Kaplan, *Wizards of Armageddon* (New York: Simon & Schuster, 1983), 331.

[57] Kaplan, 332-333. As a law professor, McNaughton knew little about nuclear arms control, but willingly learned all that Schelling could teach him.

[58] *Ibid.*, 333. Schelling paints a modest picture of his influence on the Vietnam policy process. He notes that while McNaughton was not the only close friend who worked at the Departments of State or Defense at the time, McNaughton was the only one who ever asked him for advice on Vietnam. He continues by stating that while many people read his work at the time of Vietnam, he does not know for sure "whether his writing had any influence on Viet nam (sic) policy." Thomas C. Schelling, e-mail to author, February 29, 2000.

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the U.S. is prepared … to enter into a … program … of graduated military pressures directed systematically against the DRV [Democratic Republic of Vietnam]. Such a program would consist principally of progressively more serious air strikes, of a weight and tempo adjusted to the situation as it develops… Targets in the DRV would start with infiltration targets south of the 19th parallel and work up to targets north of that point. This could eventually lead to such measures as air strikes on all major military-related targets, aerial mining of DRV ports, and a U.S. naval blockade of the DRV. The whole sequence of military actions would be designed to give the impression of a steady, deliberate approach, and to give the U.S. the option at any time … to proceed or not, to escalate or not, and to quicken the pace or not. Concurrently, the U.S. would be alert to any sign of yielding by Hanoi, and would be prepared to explore negotiated solutions that attain U.S. objectives in an acceptable manner.[59]

Gradualism's key themes are all here, either explicitly or implicitly: a slow increase of the threat to what was perceived to be important to the adversary, the sense of deliberateness, the idea of communicating with the adversary and being receptive to receiving a signal about yielding from Hanoi.

Schelling's ideas of gradualism did have a direct influence on the Johnson Administration's approach to dealing with the North Vietnamese. While the principals would have been open to such a rational way of conducting diplomacy through the use of the military instrument, the fact that John McNaughton, versed in Schelling's theoretical ideas, was in such an influential position within the government certainly helped bring these concepts to the forefront of decision-makers' minds.

Still, President Johnson had the final say on all policy matters. As such, he must also have been convinced of the efficacy of using such a strategy. The next section will examine how gradualism resonated with Johnson's psyche.

Gradualism and President Johnson

President Lyndon Baines Johnson assumed the Presidency after John F. Kennedy's assassination in November 1963; the American people elected him in his own right a year later. Before becoming Vice President, Johnson had a very successful career in Congress, first as a representative from Texas, then as a Senator, finally becoming Senate Majority Leader in 1955. During his time in the Senate, Johnson was renowned for his ability to single-handedly control the body and to move legislation through it. A Johnson biographer declares:

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[59] "Draft Position Paper on Southeast Asia," November 29, 1964, in *The Pentagon Papers*, 374-5.

There can be no doubt that Lyndon Johnson was among the most effective and powerful leaders in the history of the United States Senate. He had his critics, but at any time during his leadership he would have received, had he asked for it, an overwhelming vote of confidence and approval from his colleagues, the press and the public…Lyndon Johnson was an impressive leader responsible for some of the most significant achievements of his time.[60]

To be such an effective leader in a legislative body like the United States Senate, a person must have the ability to bargain, to give up something now for considerations in the future, and to persuade others that the course of action that has been chosen is the best. Johnson liked to do this through either the use of carrots to entice a reluctant colleague to vote his way or through the use of a stick to threaten to punish a member who did not appear willing to go along with what had been decided.

Johnson's inclination for bargaining stayed with him once he became President. When confronted with the complex situation that the United States faced in Vietnam, he naturally gravitated to the option that struck a chord in his psyche—the bargaining option. At the center of Schelling's concept of compellence is the idea of two sides bargaining to come to a mutually agreed upon position. This fit very well with Johnson and the way he liked to do business:

I saw our bombs as my political resources for negotiating a peace. On the one hand, our planes and our bombs could be used as carrots for the South, strengthening the morale of the South Vietnamese and pushing them to clean up their corrupt house, by demonstrating the depth of our commitment to the war. On the other hand, our bombs could be used as sticks against the North, pressuring North Vietnam to stop its aggression against the South. By keeping a lid on all the designated targets, I knew I could keep the control of the war in my own hands. If China reacted to our slow escalation by threatening to retaliate, we'd have plenty of time to ease off the bombing.[61]

Schelling's conception of gradualism, the idea of bargaining to reach a mutually acceptable position and having control of the operation residing at the highest levels of the government, was a policy prescription tailor-made for President Johnson as he dealt with the situation. Not only could he offer carrots to the South Vietnamese and threaten sticks at Hanoi, but with the control that the theory promised, he could walk other tightropes. He could be seen continuing the U.S. policy of containing the spread of

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[60] Kearns, 158-9.

Communism, while ensuring that the situation did not get out of control with either China or the Soviet Union. He could enhance U.S. credibility with American allies in Europe by supporting an ally in Southeast Asia, while making sure that U.S. military action did not upset the prospects for the passage of his Great Society agenda.

Gradualism and McNamara

Before he became President Kennedy's Secretary of Defense in 1961, Robert S. McNamara experienced a meteoric rise to the top of the business world. After graduating from the University of California at Berkeley and Harvard Business School, McNamara served in the Army Air Force during the Second World War. He rose to the rank of Lieutenant Colonel and made a name for himself by using a new field of mathematics called systems analysis to rationalize how the Army fought its air war. After the war, McNamara helped turn around management practices at Ford, allowing the company to become profitable again. Recognizing his talent with numbers and his business sense, Henry Ford named McNamara President of the corporation in 1960, the first non-family member to be so chosen.[62]

For McNamara, "The power of information, the importance of data, the need for control and analysis," were lessons that he brought from his experience in the military and the business world to the Pentagon in 1961.[63] Systems analysis, using numbers to compare different options in a situation where the problem lends itself to quantification, was the tool that McNamara used to reform many Pentagon management practices used to run the military services. Unfortunately, systems analysis is not useful in situations where the problem is unquantifiable.

One can safely conclude that McNamara, based on his personality, his propensity for numbers and the quantifiable, and his experience as a businessman, would have found gradualism enticing for two reasons. He would have liked the close control over the application of military force that gradualism required. McNamara would see this control, analogous to turning the volume on a radio up and down, as a way to rationally control violence in incremental steps. The second reason that McNamara may have found

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[61] Lyndon B. Johnson, as quoted in Kearns, 264.
[62] An excellent biography on McNamara is Deborah Shapley, *Promise and Power: The Life and Times of Robert McNamara* (Boston: Little, Brown, 1993).

gradualism so appealing is the prospect that it offered for efficient warfare. If one could bend an adversary to your will with a minimal use of force, as gradualism seemed to promise, then this would be an efficient use of the military instrument. This expectation for efficiency would have fascinated the businessman in McNamara, who made his reputation as a manager who could cut costs and rationalize a system of production.

The entry of gradualism into the repertoire of the Johnson administration was shaped by two factors. Not only did an administration that was intellectually sympathetic to the ideas of limited war and gradualism enter office immediately prior to the beginning of U.S. involvement in Vietnam, but gradualism's underlying concepts resonated with the two officials who had the most influence on how military operations were planned.

Operation Rolling Thunder: A Brief History

With an understanding of the contextual elements facing Washington decision-makers and an explanation about how gradualism became a part of U.S. policy, the final part of the chapter will examine Operation Rolling Thunder in order to provide a point of departure for the discussion of gradualism's critiques in the next two chapters.

Prior to Rolling Thunder

Rolling Thunder was not the first direct U.S. military action against North Vietnam. By the time Washington began sustained air reprisals against the North in March 1965 for their continued support of the Viet Cong insurgency in the South, the United States had been slowly escalating military action against the North for a number of months. The first actions against the North were covert U.S.-South Vietnamese operations, mostly consisting of covert insertions of South Vietnamese sabotage teams into North Vietnam and maritime operations involving South Vietnamese sailors using small, high-speed boats crewed by U.S. Navy SEALs. In May and June of 1964, these operations had captured a number of North Vietnamese junks and destroyed a number of shore facilities.[64]

However, it was these covert actions that in all likelihood provoked the North to attack two U.S. destroyers in the Gulf of Tonkin on 2 August 1964, probably in retaliation for the covert maritime operations. It was this attack, along with a possible

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[63] Shapley, 37.
[64] McMaster, 119-20.

one three days later, that led Johnson and McNamara to order the United States' first overt military action against the North: an air strike against the torpedo boats that conducted the attack on the destroyers, as well as their supporting facilities. This reprisal had only limited military impact, but the political significance of the entire incident was greater. After the attack and reprisal, Congress overwhelmingly passed the Gulf of Tonkin Resolution, essentially giving Johnson *carte blanche* to take whatever military action he thought was necessary.

As 1964 came to a close and 1965 began, the Viet Cong began a series of attacks against U.S. interests in South Vietnam. The straw that "broke the camels back" was a Viet Cong mortar attack against the U.S. airbase at Pleiku in the Central Highlands on 7 February 1965 that killed eight American servicemen and damaged twenty aircraft. Two things differentiated this attack from previous ones. First, Soviet Premier Kosygin was in Hanoi at the time. Because of this, Washington viewed the attack as a provocation. The second factor was that President Johnson's National Security Advisor, McGeorge Bundy, happened to be in the country at the time on a fact-finding mission. While Washington reacted as if this were just a small event, Bundy's visit to the airbase "brought home the reality of war. Thrust suddenly into a chaotic environment that contrasted sharply with the relatively orderly, controlled surroundings of the White House, he began to mutter, 'We cannot stand by…just can't do this to our country.'"[65]

During his return flight to Washington, Bundy drafted a memorandum for President Johnson that recommended "the best available way of increasing our chance of success in Vietnam is the development and execution of a policy of *sustained reprisal* against North Vietnam—a policy in which air and naval action against the North is justified by and related to the whole Viet Cong campaign of violence and terror in the South."[66] He concluded the lengthy memo by declaring "It is the great merit of the proposed scheme that to stop it the Communists would have to stop enough of their

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[65] *Ibid*., 215. General William Westmoreland, the Commander of the Military Assistance Command—Vietnam, has a more cynical view, stating that Bundy, "like numbers of civilians in positions of some government authority, once he smelled a little gunpowder he developed a field marshal psychosis." General William C. Westmoreland, *A Soldier Reports* (New York: Doubleday & Company, 1976), 115.
[66] McGeorge Bundy, Memorandum to President Lyndon B. Johnson, Annex A, "A Policy of Sustained Reprisal," in *Pentagon Papers*, 423. Emphasis in original.

activity in the South to permit the probable success of a determined pacification effort."[67] Spurred by this memo, the administration crossed the Rubicon. President Johnson approved Rolling Thunder on 19 February 1965; however, the operation did not actually begin, for various political and operational reasons, until 2 March.

Operation Rolling Thunder

Interestingly, it is difficult to find a source that lists Operation Rolling Thunder's objectives prior to the operation.[68] The first mention of the operation's objectives comes almost three weeks after it began:

1. To reduce DRV/VC [Democratic Republic of Vietnam/Viet Cong] activities by affecting DRV will.
2. To improve the GVN [Government of Vietnam—South Vietnam]/VC relative "balance of morale."
3. To provide the U.S./GVN with a bargaining counter.
4. To reduce DRV infiltration of men and materiel.
5. To show the world the lengths to which U.S. will go for a friend. [69]

An interesting counterpoint to this occurred over two years later when McNamara, testifying before a Senate committee, declared that the objectives for the bombing of North Vietnam were to reduce the flow and/or increase the cost of infiltration of men and supplies from the North to the South, raise the morale of the South Vietnamese, and make it clear to Hanoi that they would pay a price for continued aggression in the South.[70] The difference between the two sets of objectives probably reflects the fact that the Johnson administration had given up on trying to influence Hanoi's will. One way or another, these two examples strongly suggest that the military did not receive clear guidance from its civilian masters about Rolling Thunder's objectives prior to the beginning of the operation. This lack of clear guidance is indicative of the lack of consensus within the Johnson administration on what the objectives of Rolling Thunder should be.

Rolling Thunder, lasting from 2 March 1965 to 31 October 1968, was the longest bombing campaign in United States history. The operation can be divided roughly into

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[67] *Ibid*., 425.

[68] Johnson's civilian advisors held differing opinions about the objectives for the sustained reprisal. While they all agreed on the means (bombing), their lack of consensus contributed to the continuing changes to the operation's objectives. Gallucci, 47.

[69] John T. McNaughton, Memorandum for Secretary of Defense Robert S. McNamara, "Annex—Plan for Action for South Vietnam," 24 March 1965, in *Pentagon Papers,* 434.

[70] Senate Committee on the Armed Services, *Hearings Before the Preparedness Investigating Subcommittee on the Armed Services,* testimony of Robert S. McNamara, 90th Cong., 1st sess., 25 August 1967, vol. 4, 275.

five phases. The first phase, from March to July 1965, was the strategic persuasion phase; its goal was to persuade Hanoi that the cost of assisting the Viet Cong would be too high. In July 1965, the second phase began: a renewed emphasis on interdicting men and supplies travelling to the South. This interdiction phase would continue off and on for the balance of the operation. The third phase, from June to August 1966, was the POL strike phase. During this time, airpower destroyed virtually all North Vietnamese bulk oil storage facilities. This phase ended when it was realized that striking dispersed oil drum sites was not viable. The fourth phase began in March 1967 when the Joint Chiefs of Staff persuaded President Johnson to approve persistent strikes against all the proposed "classic" strategic targets, i.e. steel mill, cement plant, explosive plant, and power plants. As 1967 wore on, and it was assessed that the bombing was not having any effect, Washington gave permission to strike strategic targets within the restricted areas near Hanoi and Haiphong. Finally, after 1 April 1968, President Johnson restricted interdiction efforts to operations south of the 20th parallel.[71]

Conclusion

Gradualism entered the Johnson administration's bag of tricks at an opportune time. President Johnson and his advisors faced the difficult task of balancing the needs of seemingly disparate demands: using enough national power to contain the perceived spread of communism and to support an American ally on the one hand, while ensuring that too much force was not used, which might have caused a Chinese or Soviet intervention or threatened the passage of Johnson's Great Society agenda on the other. Gradualism gave Johnson and McNamara a means of regulating the military effort so that they could satisfy all of the demands that faced them at the time. Moreover, both men would have found gradualism attractive because the theory's core tenets would have resonated with them. Johnson bought into the idea of bargaining with an adversary: it was the way he had made his reputation in the Congress. Gradualism's need for close control of the military instrument, along with its apparent efficiency, would have

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[71] For two good histories of Rolling Thunder, see Earl H. Tilford, Jr., *Setup: What the Air Force Did in Vietnam and Why* (Maxwell AFB, Ala: Air University Press, 1991), 89-163; and Mark Clodfelter, *The Limits of Air Power: The American Bombing of Vietnam* (New York: Free Press, 1989), 73-146. See also Robert A. Pape, *Bombing to Win: Air Power and Coercion in War* (Ithaca, N.Y.: Cornell University Press, 1996), 174-210.

appealed to McNamara's personality, as well as his experience as a businessman.

        Armed now with an understanding of the theory of gradualism as well as the context for how and why it was applied in Vietnam, the next chapter will examine the theoretical critiques of gradualism.

CHAPTER FOUR

THE THEORETICAL CRITIQUE OF GRADUALISM

He knew that the essence of war is violence, and that moderation in war is imbecility.

Thomas Babington Macaulay

Introduction

Gradualism is anathema to most military officers. The idea of not attacking an adversary with all of your combat power at the beginning of the fight, and of ignoring the long-held principles of war, is counterintuitive to the traditional way western nations like to fight. This chapter will examine some of the theoretical underpinnings of why gradualism is so contrary to the western way of war. It will look at Clausewitz's thoughts on how to conduct war, specifically his concepts of concentration, economy of force, and surprise and compare these ideas to gradualism. The chapter will also examine Clausewitz's opinions about theories of war that attempt to impose order on this inherently disorderly phenomenon. After Clausewitz, the theoretical critique will compare gradualism to airpower theories. The first theorists examined will be the "classical" airpower theorists, Giulio Douhet, William Mitchell, and the United States' Army Air Corps Tactical School. This examination will demonstrate that the early airpower theorists incorporated Clausewitz's ideas of concentration, economy of force, and surprise into airpower theory from the beginning and, as a result, share a similar contrary view about gradualism. An examination of the modern airpower theory of strategic paralysis, as espoused by its two proponents John Boyd and John Warden, follows. The theoretical section concludes by comparing gradualism to psychology as it has been applied to decision making as well as the psychological impact of air attack.

Clausewitz

An eminent scholar has noted that gradualism, "by employing violence as a tool for reasoning violates every dictum declared by Clausewitz."[72] Carl von Clausewitz served as a staff officer in the Prussian and Russian armies during the Napoleonic Wars.

From this vantagepoint, he observed first-hand the changes in the nature of war that Napoleon's genius was able to harness using the passions of the people unleashed by the French Revolution, as well as more incremental changes in technology and tactics.[73] After the war, as Commandant of the Prussian *Kriegsakademie*, Clausewitz began to construct his theory of war. Incorporating his ideas on pedagogy and using the tools provided by German romantic philosophy, he penned *On War*, perhaps the best theory of war ever written. The theory's two most important concepts are the importance of the moral aspect of war and the idea that war must be subservient to political ends: "War is merely the continuation of policy by other means."[74] This theory's influence on commanders and military thinkers since Clausewitz' death in 1831 has been profound.[75]

Clausewitz can be used to critique gradualism on two levels. The first deals with the actual conduct of war. Clausewitz identifies three basic principles "that underlie all strategic planning and serve to guide all other considerations."[76] These principles are concentration, economy of force, and surprise. In *On War*'s book entitled "War Plans", Clausewitz notes the importance of determining an enemy's center of gravity: "the hub of all power and movement, on which everything depends." He stresses the modern concept of concentration by concluding that the center of gravity "is the point against which *all our energy* should be focussed."[77] Using a metaphor from the physical sciences, to have the most efficient effect on a physical object, one should apply force at its center of gravity. It follows, then, that the more force one applies against the center of gravity, the greater the effect will be on the object. In contemporary mission analysis and planning, one of the first items that a commander and his staff determine is the enemy's center of gravity.[78] Once this is determined, the rest of planning for the operation can then proceed. This may include attacks against this center of gravity, or finding the best

[72] Jeffrey Record, *The Wrong War: Why We Lost in Vietnam* (Annapolis, Md.: Naval Institute Press, 1998), 42.

[73] For a good discussion of Napoleonic warfare, see "The Wars of the Revolution," in Michael Howard's *War in European History* (Oxford: Oxford University Press, 1976), 75-93.

[74] Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, N.J.: Princeton University Press, 1976), 87.

[75] See Michael Howard, "The Influence of Clausewitz," in *On War*, 27-44.

[76] Clausewitz, 617.

[77] *Ibid.*, 595-6. Emphasis added.

[78] For the Army, this determination will occur during the Intelligence Preparation of the Battlefield phase of the Military Decision Making Process. Field Manual (FM) 101-5*, Staff Organization and Operations*, 31 May 1997, 5-6.

way to negate the center of gravity's effect on the battlefield.

Clausewitz views economy of force as a corollary to concentration. In Clausewitz's mind, the key to this principle is "to ensure that no part of the whole force is idle."[79] He continues by noting that forces that are managed uneconomically are wasted, something that is "even worse than using them inappropriately."[80] Returning to the metaphor of the physical world, economy of force is the equivalent of ensuring that all force is applied against the adversary's center of gravity, for any force not so applied will produce an effect counter to what is desired. On the battlefield, this means using forces in a manner that is not somehow contributing to the fight. While some forces may not have a specific active mission at all times, like the reserve, a good commander will ensure that he has a plan for the gainful employment of all of his forces.

Clausewitz's final principle is surprise. While he asserts that the defense is stronger than the attack, he concedes that the attack does have one advantage over the defense: since the attacker chooses the timing of the attack, he can take advantage of the element of surprise. The way one gains surprise is through the "rapid use of our forces," the quick movement of one's forces to the attack.[81] The importance of surprise on the battlefield must never be underestimated. Without even considering the moral effects of surprise on an adversary, if a commander can gain surprise, he has the ability to mass his combat power on the battlefield at the place of his choosing, a place that will normally be a place of weakness for his opponent. If the general cannot achieve surprise, then his opponent may be able to react to his thrust, perhaps drastically diminishing the hoped-for effect.

Integral to surprise is the concept of speed of one's forces; Clausewitz offers further guidance to the commander regarding it. He admonishes the general that victory cannot occur fast enough because "to spread it over a *longer period* than the minimum needed to complete it *makes it not less difficult, but more*."[82] The military commander on the offense will always want to gain a decision over his opponent in the shortest possible time. An army on the offense will use supplies and energy at a significantly faster rate

[79] *Ibid.,* 213.
[80] *Ibid.,* 213.
[81] *Ibid.,* 624.
[82] *Ibid.,* 598. Emphasis in original.

than the army on the defense. Because of this, the longer the battle lasts, the weaker the offensive army becomes relative to its opponent.[83] And since the offensive army becomes relatively weaker as the battle continues, it will make the general's job "not less difficult, but more."

come into play.[84]

Clausewitz Clausewitz's principles of concentration, economy of force, and surprise are explicitly at odds with Schelling's theory of compellence and gradualism. According to Schelling, since compellence threatens to harm what the enemy holds dear, it is not necessary to concentrate your military power against it, but only to threaten its use and to communicate this threat to the adversary. Moreover, since the cornerstone of compellence is bargaining and the military is but a tool for communication, the pace of diplomacy must dictate the pace of the fight.[85] And perhaps more importantly, a slower victory through compellence and gradualism promises to be less expensive, not only for the victor, but also for the vanquished.

In addition to critiquing gradualism at the level of the conduct of war, Clausewitz has strong opinions about imposing rationality, like gradualism, on war. He considered ridiculous those who only examined the material side of war, to the exclusion of war's moral side. He continues by stating that rational war theorists "reduce everything to mathematical formulas of equilibrium and superiority, of time and space, limited by a few angles and lines. If that were really all, it would hardly provide a scientific problem for a schoolboy."[86] Rational war theories, generally based on a cost-benefit analysis view of decision-making, are all rational and quite passionless. These "cold-blooded"[87] theories, while adequate for examining war on paper or in the classroom, do not translate well to the realities of war on the battlefield where war's physical and moral domains had to contend with rational war theorists in his day. The most famous is Antoine Henri Jomini, a Swiss-born expatriate who rose to be a general officer and chief-of-staff to one

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[83] This assumes that the army conducting the offensive does not have a significant logistical advantage.

[84] For more on Clausewitz and rational theories of war, see Lt Col Robert P. Pellegrini, USA, *The Links between Science, Philosophy, and Military Theory: Understanding the Past, Implications for the Future* (Maxwell AFB, Ala.: Air University Press, August 1997).

[85] Thomas C. Schelling, *Arms and Influence* (New Haven, Conn.: Yale University Press, 1966), 172.

[86] Clausewitz, 178.

[87] Harry G. Summers, *On Strategy: The Vietnam War in Context* (Carlisle Barracks, Pa.: U.S. Army War College Strategic Studies Institute, 1981), 22.

of Napoleon's marshals. A contemporary of Clausewitz, he also tried to explain the phenomenon of Napoleon's success, but his intellectual training led him to approach the problem from a different philosophical perspective.

Jomini was a product of Enlightenment thought. As such, he believed that it was possible to describe all natural phenomena in scientific terms, as Newton did with the universe. Because of this influence, Jomini believed he could describe war in "scientific terms." His most important work, *The Art of War*, reflects these ideals. Its central proposition is that military science rests upon principles that can never be safely violated in the presence of a skillful enemy. These four principles are:

> 1. Mass the army via strategic movements upon the decisive points of the theater of war and the enemy's communications without compromising your own.
> 2. Maneuver to engage fractions of the hostile army with the bulk of your forces
> 3. On the battlefield, mass forces on the decisive point, or upon that portion of the hostile line, which is most important to overthrow.
> 4. It is important not only to mass on the decisive point, but also to do it at the proper times and with energy.[88]

That these principles cannot be violated without risk is indicative of Jomini's belief in the scientific examination of war.

But Jomini acknowledged war's moral side too. In the preface to the 1854 edition of *The Art of War*, Jomini acknowledges, in a polemic with Clausewitz's ghost, that as "a general officer, after having assisted in a dozen campaigns, *ought to know that war is a great drama, in which a thousand physical or moral causes operate more or less powerfully, and which cannot be reduced to mathematical equations.*" [89] While Jomini recognized the existence of the moral domain of war, it seems that since he could not reduce it to a mathematical equation, he could not encapsulate its significance.

While Clausewitz viewed with disdain the rational war theorists of his day, he did recognize a use for such theories. Clausewitz divides the activities related to war into two categories: "those *that are merely preparations for war, and war proper.*"[90] Preparations for war include such things as design, production, and use of weapons, and

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[88] Antoine Henri Jomini, *The Art of War,* trans. G.H. Mendel and W.P. Craighill (Westport, Conn.: Greenwood Press, 1971), 70.

[89] Antoine Henri Jomini, "Notice of the Present Theory of War, and its Utility," in *Summary of the Art of War*, trans. O. F. Winsop and E. E. McLean (New York: G. P. Putnam & Co., 1854), 14. Emphasis in original.

the internal organization of the army. Clausewitz recognized that these preparations, analogous to the mission of today's military to organize, train, and equip the military forces, eventually rose to the level of a "refined mechanical art." But he cautions that these are "about as relevant to combat as the craft of the swordsmith to the art of fencing."[91]

This criticism is directly applicable to modern, rational war theories. An example of this is a rational decision-making methodology called systems analysis, a methodology useful for quantitatively comparing two similar items, such as bids on a contract. But while it does a good job of comparing quantifiable factors, systems analysis does not capture the unquantifiable.[92] Neither systems analysis or Jomini's scientific theory of war from over a century earlier can capture the imponderables of either war or international relations. It requires the intuition of the seasoned diplomat or the experience of a long-serving military officer to provide insight into the imponderables. It is the military officer's ability to grasp the imponderables of war that make military advice to the decision maker so crucial—particularly to those decision makers who do not have significant military experience.

The parallels between Clausewitz's differences with Jomini and the arguments that senior military officers made concerning the rational way of conducting the war in Vietnam are striking. In both cases, the rationalists brushed aside the importance of war's moral domain in the rush to quantify a phenomenon that does not completely lend itself to quantification. If the decision maker decides policy without due consideration for war's moral nature, then any military operation undertaken under such circumstances is a risky venture indeed.

Discussion

Clausewitz and Schelling present a fascinating contrast in ideas. Both theorists explicitly state that war is a continuation of politics and that the use of the military instrument must serve political ends. It is the manner in which the policy makers employ that military instrument that sparks the contradiction. In Clausewitz's day, the

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[90] Clausewitz, 131. Emphasis in original.
[91] *Ibid*., 133.
[92] Bernard Brodie, *War and Politics* (New York: MacMillan Publishing Co., 1973), 453-63.

adversary's fielded forces were almost always the center of gravity. Once a general destroyed or captured the opposing army, the victorious side could then accomplish its intent, be it seizing a province or placing a sympathetic ruler on the adversary's throne. This has two implications. The destruction of the adversary's fielded forces is still viewed by many as the key to victory in a war. The quicker and more effectively one can do this, the less costly the effort will be. The second implication is that the adversary has to accede to one's demands because he has no other choice. This is similar to Schelling's idea of forcible offense, "taking something, occupying a place, or disarming an enemy or a territory by some action that an enemy is unable to block."[93]

Schelling has a different view. In a compellent campaign, one government is trying to compel another to *voluntarily* change its mind through the mere threat of damage to something that it values; this might be the army, the population, or some national treasure or resource. The graduated increase in the application of military power will ensure that only the minimal amount of force needed to compel the adversary is used. In Schelling's theory, the massive use of combat power is wasteful and inefficient.

It is this difference of opinion over the use of the military instrument and their widely contrasting views on its most efficient use that is at the heart of the contradiction between Clausewitz and Schelling.

Airpower Theory

Having examined how Clausewitz's theory of war can be used to critique rational war theories in general, and gradualism in particular, let us now examine how gradualism stands up to airpower theory. This section will do this in three parts. The first will examine the changes in the nature of warfare from the time of Napoleon to the beginnings of the twentieth century and the first use of airpower. Having provided the context, the next section will then examine the "classical" airpower theorists. This examination will reveal that the early airpower theorists embraced the same principles that Clausewitz espoused, concentration, economy of force, and surprise. Finally, the section will conclude by examining the modern airpower theory of strategic paralysis.

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[93] Schelling, 79.

Background

From the time of Napoleon to the beginning of the First World War, the theme that encapsulates the changes in the nature of war is that war became increasingly total in nature. This is particularly evident in the economic and social aspects of the phenomenon. The rest of the nineteenth century after Napoleon saw the maturation of the Industrial Revolution. This allowed nations to produce, for the first time, the means of warfare both in large quantities and relatively inexpensively. Tied to industrialization was the need for larger numbers of workers to work in the factories to produce the means of war. By the beginning of the First World War, all of the principal nations involved in the conflict were industrialized to a greater or lesser extent; during the war, all the principal nations mobilized their respective economies to maximize the production of war materiel.

The social aspect of the change in warfare is related to this full mobilization of the economy. One of the most important changes that Napoleon harnessed to his advantage was the sense of nation that the French people felt after the Revolution. This was the idea that all people in the country were citizens and bore responsibility for their nation's defense and welfare. As war approached totality, the idea of mobilizing not only the economy for war, but the entire society, began to take hold.[94]

Classical Airpower Theorists

While airpower made its debut during the First World War, its effect on the outcome of the conflict was far from decisive. However, the effect of the First World War on the rise of airpower "was anything but modest."[95] The First World War influenced the evolution of airpower in four ways. The first, and perhaps the most influential, effect was the horror of trench warfare. The conflict in the West was a protracted war in the trenches, where hundreds of thousands of soldiers were killed and wounded in indecisive offensives that gained only limited territory. The impact of these losses had a tremendous psychological impact on the nations' societies, leadership, and military. The second influence was how airpower was used during the war. During the

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[94] For a more in-depth elaboration of these changes, see Howard, *War in European History*, 94-135.
[95] Lee Kennett, *The First Air War, 1914-1918* (London: MacMillan, 1991), 226.

conflict, aircraft and air combat evolved from the early days of unarmed aircraft being used as spotters for the artillery, to the end of the war when all of the major functional areas of modern airpower had been tried, some with more success than others. Another of the war's influences is a manifestation of its growing totality. During the conflict, war took on uglier forms. Poison gas was used for the first time in combat. In an attempt to attack each other's economies, both sides indiscriminately attacked civilians. The Germans practiced unrestricted submarine warfare on British shipping, while London imposed an economic blockade on Imperial Germany. Not only were the noncombatants on-board the torpedoed vessels subjected to these unannounced attacks, other attacks against noncombatants occurred with the German air raids against London. While the actual physical damage that these raids inflicted was limited, the precedent for a direct attack on an adversary's civilian population had now been established. The war's final influence was the lesson that airmen took away from the war about the need for an independent air arm. Airmen saw how ground commanders demanded that airpower serve the fielded forces and how ground commanders tended to fritter away airpower across the battlefield instead of concentrating its effects at the most decisive point. On the other hand, airmen, with visions of greater things to come, became convinced that the air force needed to be independent of the ground and naval forces and that they needed to be coequal to them on the battlefield.

Based on these influences, the classical airpower theorists began to think and to write about their vision for the future. These theorists, Italy's Guilio Douhet, the U.S. Army's William "Billy" Mitchell, and the U.S. Army Air Corps Tactical School (ACTS) all incorporated Clausewitz's three key principles of warfare into their airpower theories. Of the theorists, Douhet provides the most explicit description of the application of Clausewitz's principles to airpower theory. An artillery officer during the war, Douhet developed his theory of airpower with the goal that airpower would prevent the carnage of the trenches in the next war. Douhet published his theory, *Command of the Air*, in 1921.

Douhet's first principle governing the operation of the air force is that it "should operate in mass." Making the direct comparison to ground combat, Douhet states that "the material and moral effects of aerial offensives … are greatest when concentrated in

time and space."[96] This idea of airpower needing to mass its forces to ensure its most effective application can be directly linked to Clausewitz's principle of concentration.

Douhet also notes airpower's special attributes with regards to surprise. Because of the airplane's great speed relative to soldiers and vehicles on the ground, and the inherent difficulties that he foresaw defending against an air attack, Douhet concluded that airpower would have a tremendous capability to conduct a surprise attack against an adversary. Douhet also comments about speed, a necessary attribute for surprise. With airpower's great speed advantage coupled with its great range, it becomes possible to bring a great deal of combat power to any point on the battlefield in a short period of time. For Douhet, this becomes another principle for air warfare: "Inflict the greatest damage in the shortest period of time." [97]

Finally, Douhet held strong opinions about the need for an independent air force: these are tied to Clausewitz's principle of concept of economy. Douhet believed that if airpower remained an auxiliary to ground and naval commanders, then it would not be used to its greatest effect. Since ground commanders demonstrated during the war that they were likely to spread air assets piecemeal across the battlefield, airpower could not mass effectively to achieve decisive results. In Douhet's mind, only an independent air force with an air commander coequal to the ground commander would ensure that air assets would be employed to their fullest and most decisive effect.[98] Implicit in this is the Clausewitzian notion of economy of force: ensuring that all of your combat power is being used appropriately.

Douhet, Mitchell, and the ACTS all reached similar conclusions about the transferability of the Clauswitzian principles to airpower.[99] Yet despite these similar conclusions about the important characteristics of airpower, the three came to contrasting

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[96] Giulio Douhet, *Command of the Air,* trans. Dino Ferrari (Washington, D.C.: Air Force History and Museums Program, 1998), 49.

[97] *Ibid.,* 51.

[98] *Ibid.,* 73-77.

[99] For examples of Mitchell's work, see William Mitchell, *Winged Defense: The Development and Possibilities of Modern Air Power--Economic and Military* (New York: Dover Publications, Inc., 1988); for a good summary of the development of airpower doctrine at ACTS, see Lt Col Peter R. Faber, "Interwar US Army Aviation and the Air Corps Tactical School: Incubators of American Airpower," *The Paths of Heaven: The Evolution of Airpower Theory,* ed. Col Phillip S. Meilenger (Maxwell AFB, Ala.: Air University Press, 1997): 183-238; and Robert T. Finney, *History of the Air Corps Tactical School, 1920-1940* (Washington, D.C.: Center for Air Force History, 1992).

conclusions about the best way to employ airpower against an adversary. These differences are manifested in their various conclusions about what the center of gravity is within an adversary's society. For Clausewitz, the center of gravity was almost always the fielded forces. However, in the age of total war, where nations mobilized entire societies and economies to fight the war, there were now other options to choose as the "the hub of all power and movement, on which everything depends." And since military commanders and political leaders had, for the first time, the ability to apply combat power beyond the immediate battlefield, the airpower theorists came to differing conclusions.

Douhet's center of gravity was the enemy's civilian population: an attack on the civil populace would cause them to rise up against their government and demand an end to the war.[100] Mitchell took a different view. A flyer and experienced commander with the American Expeditionary Force in France at the end of the war, Mitchell also had an impassioned view about airpower and its future. He prescribes that "Air forces will attack centers of production of all kinds, means of transportation, agricultural areas, ports and shipping; not so much the people themselves."[101] For Mitchell, the enemy's center of gravity is broad—it is the adversary's means of production, as well as its transportation infrastructure. The ACTS was the "think tank" that the Army Air Service established in the 1920s to develop doctrine and tactics for the Air Service (later Corps) as well as teach this doctrine to Army officers. At the core of the ACTS' theory was the belief that the destruction of the adversary's economy would lead to social collapse and enemy capitulation. And central to this was the idea that an economy would have a vital center that, if destroyed, would bring down a nation's entire economy .[102] Considerable debate ensued, however, that lasted through the end of the Second World War, about what might be the elusive vital centers of the German and Japanese economies.

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[100] Douhet, 58.
[101] Mitchell, 16
[102] Faber, 216-219.

The important point from this discussion is that while the three classical airpower theorists differ on what the Clausewitzian center of gravity might be, they all used this Clausewitzian construct to apply a new means of war, a means that uniquely applies the same principles that Clausewitz deemed critical to success on the battlefield a century earlier.

Strategic Paralysis

Having analyzed the ideas of Clausewitz and how these translated to the early airpower theorists, let us now examine modern airpower theories. Perhaps the most important airpower concept to evolve in the last decade is the idea of strategic paralysis. One definition of strategic paralysis states that it is

> a military option with physical, mental, and moral dimensions which intends to disable rather than destroy the enemy. It seeks maximum possible political effect or benefit with minimum necessary military effort or cost. It aims at rapid decision through a "maneuver-battle" directed against an adversary's physical and mental ability to sustain and control its war effort to diminish its moral will to resist.[103]

The most prominent proponents of strategic paralysis are the late John Boyd and John Warden. Although they approach it from different perspectives, Boyd from the psychological, Warden from the physical, their conceptions of strategic paralysis are complementary.[104]

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[103] David S. Fadok, *John Boyd and John Warden: Air Power's Quest for Strategic Paralysis* (Maxwell AFB, Ala.: Air University Press, 1995), 10. This is reprinted almost in its entirety in *Paths to Heaven: The Evolution of Airpower Theory.*

[104] *Ibid.*, 48. Fadok's work, originally his School of Advanced Airpower Studies thesis, is a superlative study of the ideas of Boyd and Warden.

Boyd's first inspiration for what would eventually become his conception of strategic paralysis came as he was dogfighting MiG-15s over the skies of Korea, although he didn't realize it at the time. He observed that if a pilot in an F-86 could react faster than his opponent in a MiG-15, then the Sabre pilot would usually win the fight.[105] Boyd later codified this concept in his OODA Loop, or Observe, Orient, Decide, and Act (see Figure 1).[106] After Boyd's combat tour in Korea was over, he returned to the United States, where he became a recognized expert in both the technology and tactics of aerial combat.

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┌─────────────┐     ┌─────────────┐     ┌─────────────┐     ┌─────────────┐
│   Observe   │ ──▶ │   Orient    │ ──▶ │   Decide    │ ──▶ │     Act     │
└─────────────┘     └─────────────┘     └─────────────┘     └─────────────┘
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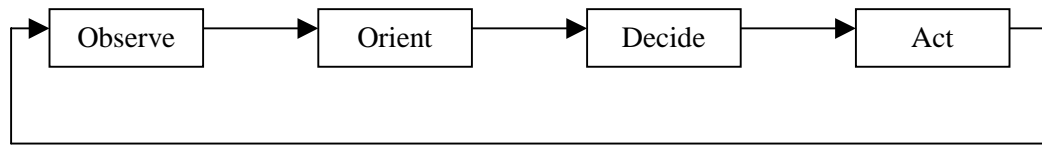
Figure 1: Boyd's OODA Loop

Upon his retirement from the Air Force, Boyd set out to develop his ideas from the tactical level into a more generalized theory of warfare. His final product was a five-part briefing entitled "A Discourse on Winning and Losing." According to Boyd's theory, warfare's aim is to "render the enemy powerless *by denying him the time to mentally cope* with the rapidly unfolding, and naturally uncertain, circumstances of war."[107] To do this, a commander has two options. He can either decrease his own decision-making cycle time or he can increase that of his enemy.[108] A way to increase an adversary's decision time is to maximize the friction that the enemy commander has to overcome; the means of doing that is by planning "to attack with a variety of actions which can be executed with the *greatest possible rapidity*."[109] The goal is "to overload the adversary's capacity to properly identify and address those events which are most threatening. By ultimately reducing an opponent's physical and mental will to resist, one ultimately crushes his moral will to resist as well."[110]

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[105] This was because the F-86's full power flight controls that gave Sabre pilots the ability to shift from one maneuver to another quicker than their MiG-15 opponents.

[106] While the Air Force has been slow to incorporate the OODA Loop into its operational doctrine, the Army and Marine Corps have embraced it. See FM 100-5, *Operations,* June 1993.

[107] Fadok, 14. Emphasis in original.

[108] The Army uses the OODA loop's idea of decreasing one's decision-making cycle by emphasizing training and application of the Military Decision Making Process.

[109] Fadok, 15. Emphasis in original.

[110] *Ibid.,* 15.

The key to Boyd's concept of strategic paralysis is to increase an adversary's decision-making cycle through varied and rapid attacks, increasing the friction within his army. Doing this effectively will eventually cause his physical and mental will to resist to crumble, which in turn will degrade and eventually destroy his moral will.

An imperfect, yet illustrative example of Boyd's conception of strategic paralysis appeared in the 1991 Gulf War. Coalition air attacks targeted the Iraqi Army's communications with Baghdad. The Iraqi Army, very centralized in nature, was not capable of autonomous operations. By cutting off most of the communication between it and the capital, Saddam was forced into using inefficient and slow means of communicating with his army in and around Kuwait, namely couriers. Because of this imposed friction, it may have taken as long as 48 hours for decisions to be made and executed: 24 hours for a report from the army to reach Baghdad and another 24 hours for the courier to make the return trip with the resulting orders. Meanwhile, the coalition, with its unimpeded command and control capability, was able to make and implement decisions significantly faster than their adversary. While it is difficult to assess how much of the collapse of the Iraqi physical and mental will can be attributed to the lack of communication with Baghdad vice other factors, this is still a good example that demonstrates the concept of strategic paralysis.

Warden, like Boyd, grew up in the Air Force as a fighter pilot. As a student at the National War College, his thesis discussed how to use airpower at the operational level of war; it was later published as *The Air Campaign: Planning for Combat*.[111] From the ideas encapsulated in his thesis and from his contribution to the development of the Instant Thunder air campaign plan that became the first part of the Desert Storm operation plan,[112] Warden developed his own airpower theory. Unlike the traditional ACTS airpower theories that emphasized strategic bombardment against a vital center of an adversary's economy, Warden posited that an adversary's center of gravity was its leadership. To explain his construct, Warden draws an analogy between an adversary's country and the human body. The five rings in Warden's construct, from the inside out, represent: leadership, organic essentials, infrastructure, population, and fighting

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[111] John A. Warden, III, *The Air Campaign: Planning for Combat* (Washington D.C.: Brassey's, 1989).
[112] For a description of the evolution of the Desert Storm air campaign and Warden's role in it, see Diane T. Putney, "From Instant Thunder to Desert Storm," *Air Power History* 41, no. 3 (Fall 1994): 39-50.

mechanism. For the human body, these five rings represent the brain; food and oxygen; vessels, bones, and muscles; cells; and leukocytes. For the adversary state, these rings are the government; energy; roads, airfields, and factories; the people; and the military, police, and firemen.[113]

Warden admits that this model oversimplifies the problem of what to attack within an enemy system since there might be many centers of gravity within the five-ring system. He asserts, however, that the model does provide a point of departure for analysis of an adversary system and claims that the adversary's leadership is a logical place to begin.[114] Historically, the object of warfare is to replace the leader. More recently, with the advent of limited war, the object has become getting the leadership to change its policy. To do this, Warden states that all attacks on the adversary system should have the intent of somehow influencing the leadership to concede to one's demands. Thus in Warden's view, it would be valid to attack an adversary's fielded forces if the attack provided some coercive effect against him.[115]

As for the means of the attack, Warden advocates attacking the numerous key targets in all five rings in parallel, or simultaneously. In traditional ground warfare, attacks occur serially, giving the adversary an opportunity to alleviate the effects of the attack over time. Conversely, "parallel attack deprives him of the ability to respond effectively, and the greater the percentage of targets hit in a single blow, the more nearly impossible his response."[116]

The key for success for Warden's conception of strategic paralysis is rapid, massive parallel attack against any target within the enemy system that will coercively influence the adversary's leadership. While Boyd advocates strategic paralysis through the psychological paralysis of the adversary, Warden forces the adversary to change his mind through the physical destruction of parts of his state system important to him either economically or for his very survival.

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[113] John A. Warden, III, "The Enemy as a System," *Airpower Journal* 9, no. 1 (Spring 1995), 44-49.
[114] *Ibid.*, 49.
[115] *Ibid.*, 51-2. However, Warden believes that attacking the fielded forces is not the most efficient or effective way to coerce an adversary's leadership.
[116] *Ibid.*, 54.

Discussion

       Boyd and Warden are similar to Clausewitz and the classical airpower theorists in that they all argue for the importance of the same three characteristics: concentration, economy of force, and surprise. In addition, Boyd and Warden propose different centers of gravity against which combat power must be focussed—centers of gravity that are *not* the enemy's fielded forces—the Clausewitzian view.

       Let's now compare strategic paralysis to Schelling's ideas about gradualism. The main point of comparison between their theories is that for both Boyd and Warden, paralysis of an opponent requires a rapid and forceful attack throughout the depth of the adversary's nation. Gradualism takes a completely different approach. Since gradualism is essentially bargaining between two countries, diplomatic action dictates the pace of the campaign, and as a result, the campaign will generally not be rapid. Moreover, the graduated campaign's deliberate nature means that a quick attack against an adversary is not required, making the need for concentration of forces unnecessary. Finally, the key compellent threat in gradualism is the military's latent power to harm what the adversary holds dear. It is the threat of losing these "hostages" that will compel the adversary to accept the terms one is dictating. If the "hostages" are destroyed at the outset of the campaign, the adversary will no longer have any reason to concede to your demands.

       Another point, perhaps more important, is that Boyd and Warden, although disagreeing somewhat on the means, both advocate a concentrated, rapid attack to overwhelm an adversary's national decision-making process. Schelling, on the other hand, is *relying* on the adversary's decision-making system to function in the manner in which it was designed. This difference is the key contradiction between the proponents of strategic paralysis and that of gradualism.

       The key facets of gradualism thus at odds with the theoretical basis for how the West makes war. Clausewitz and airpower theorists all agree on the need for concentration, economy of force, and speed when attacking an adversary. Western militaries have adapted these Clausewitzian principles and codified them as their Principles of War. Current Air Force doctrine declares that "These principles represent generally accepted 'truths' which have proven to be effective throughout history. Of course, even valid principles are no substitute for sound, professional judgment—*but to*

ignore them is equally risky."[117] The services ingrain the importance of these principles into their officers from the earliest days of officer training. As a result, most officers believe that to ignore these principles without due cause is a risky proposition. For a military officer, then, to be told that he must follow a strategy that ignores these principles for reasons that do not make sense to him is an invitation for questioning and critique.

Psychology, Decision Making, and Air Power

The last theoretical area that this chapter will examine is the psychology of decision making, of the effect of air attack on decision making, and gradualism's influence on them. Since compellence is a strategy whose objective is to force an adversary to change its mind, then understanding how decision making works is important to understanding compellence and gradualism. Airpower can provide a tremendous psychological influence on decision making. But when it had been used in a less than optimal manner, then airpower can hinder the compellent campaign.

Decision Making

Perhaps the simplest way to view decision making is that it consists of a cost-benefit analysis between two or more options.[118] In this model, a decision maker will choose the option that provides the greatest benefit and least cost. In a compellence situation, the two choices are compliance with the compelling nation's demands and non-compliance. One would expect an adversary to continue being non-compliant as long as the non-compliance results in a greater benefit and smaller loss than compliance.[119]

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[117] Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine*, September 1997, 12. Emphasis added. See also FM 100-5, 2-4 – 2-6; and Russell F. Weigley, *The American Way of War: A History of American Military Strategy and Policy* (Bloomington, Ind.: Indiana University Press, 1973), 212-4. For a theoretical derivation of the Principles of War, see J. F. C. Fuller, *The Foundations of the Science of War* (London: Hutchinson & Co., 1926, reprint, Fort Leavenworth, Kans.: U.S. Army Command and General Staff College Press, 1993).

[118] This assumes that the decision maker is rational actor as explained by Graham T. Allison's Model I view of decision making. See Allison, *Essence of Decision: Explaining the Cuban Missile Crisis* (New York: HarperCollins, 1971). As later chapters will show, this is not necessarily a safe assumption to make.

[119] This explanation of the benefits and costs of compliance was extrapolated from Thomas W. Milburn's discussion of deterrence. The cost-benefit analysis is similar for coercion as it would be for deterrence, i.e. deciding which option is the most beneficial. See Milburn, "What Constitutes Effective Deterrence?" *Journal of Conflict Resolution* 3, no. 2 (1959): 138-145.

Another way to view this is through an illustrative equation, termed the rational decision making equation:

$$\text{Costs}_N - \text{Benefits}_N > \text{Costs}_C - \text{Benefits}_C$$

where Costs_N are the costs of non-compliance; Benefits_N are the benefits of non-compliance; Costs_C are the costs of compliance; and Benefits_C are the benefits of compliance. This equation suggests that until the value on the left side of the equation becomes greater than the right side, an adversary's non-compliance will continue.

There are a number of ways a compelling nation can affect these variables in a compellence situation. A compelling government can increase the costs of non-compliance through damage that it inflicts, either through military strikes or economic sanctions. In a graduated scenario, if a compelling nation can destroy targets that its adversary values, then this factor could become quite large and dominating. The other variable a compelling government can affect is the benefits of compliance—these would be the carrots a government offers to gain compliance. If the benefits of compliance become great enough, then this variable could dominate the decision making. A compelling government is less able to influence the other two variables, Benefits_N and Costs_C.

However, there are other factors that the compelling government has little direct control over, which can influence these other two variables, Benefits_N and Costs_C. A historical examination of the coercive use of airpower demonstrates that these factors increase the values of these variables, which in turn may lessen airpower's coercive effects and change the complexion of an adversary's decision-making process significantly. The first factor that one must consider is whether the compelled nation has access to outside support, material, moral, or both. This outside support can decrease a compelled nation's costs of non-compliance (through the replenishment of combat losses) or increase the benefits of non-compliance (such as benefits the compelled nation might receive if its non-compliance succeeds). This in turn improves the likelihood of non-compliance leading to success, which increases the expected payoff of resistance. The second factor that a compelling nation cannot directly influence is how strongly the adversary's leadership is committed to the goal it is trying to achieve. If the adversary's goal is important to it, then the benefits that it sees for non-compliance will be

significant. This in turn will drive how much the adversary is willing to absorb punishment.[120]

Understanding an adversary's decision-making process is important when one is contemplating a compellent campaign. The theory of gradualism suggests the importance of understanding what the adversary values so that one can threaten it. Yet it seems that there is more to successful compellence than just simply knowing this. The rational decision making equation demonstrates that a compelling state must realize that there are other variables in an adversary's decision making process, only some of which one can influence. And not only are there limits to how much one can influence these other variables, there are outside factors that may also affect these variables, factors that the compelling nation may not have any means to mitigate. The impact of all the variables in this equation of rational decision making must be considered and understood because any one of these, if sufficiently large, will make compellence through the threat of damage by air attack almost impossible to achieve.

The Psychology of Air Attack and Gradualism

Air attack has the potential to a have a tremendous psychological impact on an adversary: the wholesale surrender of the Iraqi army during the Gulf War in 1991 is evidence of this. To take advantage of this potential impact, one must understand how air attack psychologically affects a person or population. Not understanding this phenomenon could easily lead to the misapplication of airpower if the psychological effect is the most important effect that an air commander is trying to exploit.

Key to an air attack's psychological impact is the expectation of the person on the ground who is receiving the air attack. If the target expects the initial attack to be relatively light and undamaging and the attack is much worse than expected, this will have a negative psychological impact on that person, significantly lowering a person or population's morale, as well as their determination to continue the struggle. Conversely, if the person expects the first attack to be heavy and damaging, and it turns out to be not as bad as they had thought, then that person's morale will be bouyed by the experience,

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[120] Stephen T. Hosmer, *Psychological Effects of U.S. Air Operations in Four Wars, 1941-1991: Lessons for U.S. Commanders* (Santa Monica, Calif.: RAND Corporation, 1996), xvii.

resulting in an increase in their determination to continue the struggle.[121]

This has important ramifications for the graduated use of airpower. If a compelling government begins air attacks at a low level of intensity and threatens to increase the intensity if the adversary does not concede, then it is likely that a person's initial experience with air attacks will result in their believing that air attacks are not as bad as they expected. This in turn will lead them to conclude that the nation should stay the course it is pursuing. And since first impressions tend to persist in a person's mind, this initial impression and increased motivation will continue for quite a while, even if the intensity of the air attacks significantly increases.

This effect from the graduated use of airpower will influence a nation's leadership in the same manner. If the leaders of an enemy nation, as a result of a first impression they gain of a graduated campaign, perceive the mild military attack as an indication of lack of commitment or military capability, this perception will stay with the leadership for a long time, even when the campaign escalates and provides evidence contradicting this view.[122] In addition, if the goal that the government is to be dissuaded from is deeply held, it will be even more difficult to overcome this initial misperception.[123] The target government's initial perception of weakness of capability or of intent will reinforce its hopefulness, making the government even more intransigent in the struggle.

The converse is also true . If one is trying to persuade an adversary to change his view, it is better to provide him with a significant amount of information contradicting his view, rather than providing it to him piecemeal. [124] This supports the idea of the proponents of the "hard-knock,"[125] as well as Clausewitz and the airpower theorists, who believe that it is better to attack an adversary with all the compellent capability that one has right from the start. Doing this will inundate the adversary with information that is contradictory to his current perception, and has the best chance of compelling him through this psychological effect of airpower.

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[121] See Irving L. Janis, "Fear and Emotional Adaptation," in *Air War and Emotional Stress: Psychological Studies of Bombing and Civilian Defense* (Westport, Conn.: Greenwood Press, 1951): 98-125.

[122] Robert Jervis, *Perceptions and Misperceptions in International Politics* (Princeton, N.J.: Princeton University Press, 1976), 187-193.

[123] *Ibid.,* 196.

[124] *Ibid.,* 308.

[125] The term hard-knock signifies the quick, overwhelming attack against an adversary instead of the graduated approach that Schelling advocates.

An inherent consequence of airpower is the compellent psychological effect that an air strike has on the target. Understanding this effect and how it works is crucial in order to ensure that airpower's compellent effects are maximized. And even more important, if this effect of airpower is misapplied, then this psychological effect may give a significant boost in morale to the adversary, along with increasing his motivation to continue the struggle.

Conclusion

Gradualism's key tenets directly contradict the mainstream views of military, airpower, and psychology theory. The orthodox view from all three suggests that a quick, devastating attack is the way to overwhelm an adversary, both physically as well as psychologically. A comparison of Clausewitz and the classical airpower theorists with Schelling's ideas reveals a significant difference of opinion over the best way to conduct a compellent campaign. Schelling sees gradualism as the means of limiting the cost to both sides since the damage will stop occurring once the adversary concedes; Clausewitz *et. al.* limit their view to just the friendly side and see that the way to minimize friendly costs is to attack the adversary with all the assets available to the commander. A comparison between Schelling and the proponents of strategic paralysis, Boyd and Warden, reveals a similar key difference. While Boyd and Warden are intent on disrupting, if not destroying, the adversary's decision making capability, Schelling counts on that system working as it should. Finally, the importance of establishing the correct first impression of one's intent and capability reinforces the notion that a heavy initial strike against an adversary will result in the greatest psychological impact on an adversary in a compellence situation. The early limited air attacks in a graduated campaign may leave the target with the perception of weakness, a perception that will be difficult to change.

CHAPTER FIVE

GRADUALISM AND THE VIETNAM EXPERIENCE

> In a variety of ways, gradualism contributed to a prolongation of the war and gave time not only for more men to lose their lives but also for the national patience to wear thin, the anti-war movement to gain momentum, and hostile propaganda to make inroads at home and abroad.
>
> Maxwell D. Taylor, *Swords to Plowshares*, 1972

Introduction

The United States' actions in the Vietnam War are the subject of numerous critiques and examinations, each hoping to identify what went wrong in the conflict in order to ensure that the same mistakes are not made again. It is beyond the scope of this work to examine all of the critiques in depth.[126] Moreover, these critiques simply

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[126] These critiques can be divided into a number of different schools. At the national strategic level: Harry G. Summers in *On Strategy: The Vietnam War in Context* (Carlisle Barracks, Pa: U.S. Army War College Strategic Studies Institute, 1981) asserts that the United States, by emphasizing the insurgency in South Vietnam instead of the North Vietnamese assistance to the insurgency, misread the nature of the war. He concludes that the only way the United States could have won the war was through an all-out invasion of the North. Larry Cable, in *Conflict of Myths: The Development of American Counterinsurgency Doctrine and the Vietnam War* (New York: New York University Press, 1986) takes a different view. He claims that the United States misread the nature of the insurgency, and as a result, placed too much emphasis on trying to affect the will of the North instead of conducting a good counter-insurgent campaign. For different views on decision-making at the national level, see H.R. McMaster, *Dereliction of Duty: Lyndon Johnson, Robert McNamara, The Joint Chiefs of Staff, and The Lies That Led to Vietnam* (New York: HarperPerennial, 1997); Leslie H. Gelb and Richard K. Betts, *The Irony of Vietnam: The System Worked* (Washington D.C.: The Brookings Institution, 1979); Robert S. McNamara, et al. *Argument Without End: In Search of Answers to the Vietnam Tragedy* (New York: PublicAffairs, 1999); McNamara with Brian VanDeMark, *In Retrospect: The Tragedy and Lessons of Vietnam* (New York: Times Books, 1995); Guenter Lewy, *America in Vietnam* (New York: Oxford University Press, 1978); and Robert L. Gallucci, *Neither Peace Nor Honor: The Politics of American Military Policy in Viet-nam* (Baltimore, Md.: The Johns Hopkins University Press, 1975.

There are also different themes for critiques of airpower's application in Vietnam. Alan Gropman (Colonel, USAF, retired) reflects the mainstream view that the Washington-imposed restrictions hindered the effective application of airpower in Operation Rolling Thunder. He claims that Washington's fears about Soviet and Chinese intervention were unwarranted and resulted in the debilitating restrictions on airpower. He declares that if airpower had been allowed to conduct an unfettered campaign, like it did during Operation Linebacker II in December 1972, it could have ended the war in 1965. See A.L. Gropman, "The Air War in Vietnam, 1961-1973," in *War in the Third Dimension: Essays in Contemporary Air Power,* ed. Air Vice Marshall R.A. Mason (London: Brassey's Defence Publishers, 1986); and "Lost Opportunities: The Air War in Vietnam, 1961-1973," in *The American War in Vietnam: Lessons, Legacies, and Implications for Future Conflicts,* eds. Lawrence E. Grinter and Peter M. Dunn (New York: Greenwood Press, 1987). Others who share the view include: Douglas Pike, "The Other Side," in *Vietnam as History: Ten Years after the Paris Peace Accords,* ed. Peter Braestrup (Washington D.C.: The Woodrow Wilson Center for International Scholars, 1984); General John W. Vogt in Earle E. Partridge, et. al., *Air Interdiction in World War II, Korea, and Vietnam,* eds. Richard H. Kohn and Joseph

conclude that the graduated use of airpower was wrong and base this conclusion on the reasons outlined in the previous chapter. But if one wants to learn about how to improve the planning and execution of a graduated campaign, then one must look deeper.

This chapter will do just that. The first section will outline the derivation of a construct, based on the propositions for the theory of gradualism from Chapter Two, for analyzing the graduated use of airpower. Using this construct, the following section examines Rolling Thunder, the goal being to conclude substantive lessons from the graduated use of airpower in Vietnam.

Derivation of the Construct

This section derives a construct through which one can view the lessons of the graduated application of airpower in Vietnam. From Chapter Two, the four propositions of Schelling's theory of gradualism are:

1. "The power to hurt is bargaining power. To exploit it is diplomacy—vicious diplomacy, but diplomacy." (Central proposition).
2. Since bargaining is a key aspect of compellence and gradualism, a graduated campaign must necessarily controlled at the highest level
3. If threatening harm to what an adversary values is a key tenet, then the coercer must have intensive and extensive knowledge of the adversary
4. If bargaining is a key facet of gradualism, clear, if tacit, communication between the adversaries is a critical component of gradualism

The first criterion for evaluating the graduated use of airpower comes from proposition two. Implicit in this proposition is the idea that the political effect that the government is trying to achieve is more important than the military effect. As a result,

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P. Harahan (Washington D.C.: Office of Air Force History, 1986); General William W. Momyer, *Airpower in Three Wars* (Washington D.C.: Department of the Air Force, 1978); U. S. G. Sharp, *Strategy for Defeat: Vietnam in Perspective* (Novato, Calif.: Presidio Press, 1978); and John L. Frisbee, "The Practice of Professionalism," *Air Force Magazine* 69, no. 8 (August 1986), 113. The revisionist school takes the opposing view. Dennis M. Drew, Mark Clodfelter, and Earl H. Tilford all examine the application of airpower in Vietnam through the lens of Air Force history and doctrine. They all agree that the Air Force was unprepared for a Vietnam-type conflict. They also believe that the strategic variables changed between 1965 and 1972 and, as a result, a Linebacker II-type campaign in 1965 would not have yielded any sort of lasting peace that was favorable to the United States. See Dennis M. Drew, *Rolling Thunder: Anatomy of A Failure* (Maxwell AFB, Ala.: Air University Press, 1986); Earl H. Tilford, *Setup: What the Air Force Did in Vietnam and Why* (Maxwell AFB, Ala.: Air University Press, 1991); and Mark Clodfelter, *The Limits of Air Power: The American Bombing of Vietnam* (New York: Free Press, 1989). For two good operational histories of Rolling Thunder, see John Schlight, *The United States Air Force in South East Asia: The War in South Vietnam: The Years of the Offensive, 1965-1968* (Washington, D.C.: Office of Air Force History, 1988); and Lon O. Nordeen, "Rolling Thunder: North Vietnam, 1964-1968," in *Air Warfare in the Missile Age* (Washington, D.C.: Smithsonian Institution Press, 1985).

control and coordination at the highest level, as well as the need for the diplomatic effort to dictate the pace of the campaign to the military, could result in the military instrument not being employed to its fullest coercive effect. The criterion to evaluate this would be: What are the positive and negative effects on the military instrument that result from its subordination to the diplomatic effort?

The second criterion comes from the melding of gradualism's central proposition and proposition three. Implicit in the central proposition is the idea that if one threatens to hurt what an adversary values in an attempt to compel him, one must know what the adversary values: "one needs to know what an adversary treasures and what scares him."[127] The need for this information is simply part of having an intensive and extensive knowledge of the adversary. Because of this, the central proposition is combined with the third to produce the following criterion: How well do the government and the military know the adversary, specifically what part of his nation he values the most?

The last criterion is easily derived from the fourth proposition. A compellent campaign is bargaining and communication between two adversaries. If the military is going to be used as a means of communication in this campaign, then knowing its ability to communicate a message is important. As a result, the final criterion is: how well does the military instrument communicate the government's message?

With the derivation of the construct, it is now possible to examine how well airpower was used during Operation Rolling Thunder.

The Effects of Diplomacy on the Military Instrument

In a compellent campaign, diplomacy dictates the pace and nature of the use of the military instrument. As a result, the military effectiveness of the campaign is not the most important goal, as long as the desired political effect is achieved.[128] But this may lead to the military instrument being used in ways that not only decreases its inherent compellent effect, but it may also be used in a manner that produces an overall negative effect on the whole compellent campaign that unintentionally aids the enemy's effort.

This was the case during Operation Rolling Thunder. The graduated use of

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[127] Thomas C. Schelling, *Arms and Influence* (New Haven, Conn.: Yale University Press, 1966), 3.
[128] *Ibid.,* 172-3.

airpower produced unintended effects that aided the North Vietnamese by allowing them to strengthen their military capability as well as encouraging their military and population to resist.

The gradual increase in the intensity of the airstrikes, as well as the restrictions limiting attacks against air defenses, allowed the North Vietnamese to increase the lethality of their air defenses. Some have argued that if the United States had struck North Vietnam with the full capability of its airpower early on when its air defenses were the weakest, U.S. airpower might have conducted the operation with minimal casualties and might have compelled Hanoi to change its policy about supporting the Viet Cong in South Vietnam.[129] Instead, by the end of Rolling Thunder, Hanoi built one the of the most sophisticated air defense networks of its day. In August 1964, North Vietnam possessed only 1,400 pieces of anti-aircraft artillery (AAA), 22 acquisition radars, and four fire control radars. By the beginning of 1967, however, the North Vietnamese air defense net had become much more robust: 7,000 to 10,000 AAA pieces and more than 200 known SA-2 sites.[130] In addition, the North Vietnamese Air Force (NVAF) gained more and better quality interceptor aircraft, along with the training to use them effectively.[131] As to be expected from a Soviet-style air defense, the various components of the air defense system were complementary. To escape the threat posed by the SA-2 at medium altitudes, U.S. aircraft descended to lower altitudes where the large number of AAA guns were the most dangerous: more than 80% of U.S. aircraft losses in Vietnam were due to AAA.[132]

Another way that the gradualism allowed the North Vietnamese to increase their military capability resulted from Washington's attempts at signaling and the bombing pauses—this is a result of the bargaining that is inherent to gradualism. Both are tools of diplomacy. Signaling is a communication tool with which the government tries to show resolve or willingness to escalate a situation to the next level, either diplomatically, economically, or militarily. Washington intended bombing pauses as a sign of good faith

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[129] Sharp, 49; John W. Vogt, Jr., quoted in Earle E. Partridge, et al., 70.

[130] J. C. Scutts, *F-105 Thunderchief* (New York: Charles Scribner's Sons, 1981), 51, 83.

[131] See Robert L. Young, "Fishbed Hit and Run: North Vietnamese MiG-21s versus the USAF, August 1967-February 1968," *Air Power History* 42, no. 4 (Winter 1995): 56-69.

[132] Benjamin S. Lambeth, *The Transformation of American Air Power* (Ithaca, N.Y.: Cornell University Press, 2000-Forthcoming), 18.

to allow Hanoi the opportunity to decide how it wanted to respond to a proposal that the diplomatic effort had placed on the bargaining table.

The North Vietnamese took advantage of the United States' use of signaling and bombing pauses. One of the most notorious examples of Hanoi's taking advantage of signaling is illustrated in a reported conversation between Assistant Secretary of Defense John McNaughton and General William C. Westmoreland's air commander, Lt. General Joseph Moore. During a McNaughton visit to Saigon, Westmoreland and Moore sought permission to attack North Vietnamese SA-2 sites that were under construction before they became operational. McNaughton replied to the two generals: "You don't think the North Vietnamese are going to use them! Putting them in is just a political ploy by the Russians to appease Hanoi." As General Westmoreland summarized the exchange: "It was all a matter of signals, said the clever theorists in Washington. We won't bomb the SAM sites, which signals the North Vietnamese not to use them."[133] Needless to say, the first North Vietnamese use of SA-2 missiles against U.S. aircraft demonstrated that they interpreted the signal differently than what the U.S. intended. By not allowing airpower to attack components of the North Vietnamese air defense system when these were benign in an effort to send signal Hanoi, Washington handicapped airpower's coercive ability and increased the North Vietnamese defensive capability in the process.

Hanoi also increased their defensive capability by exploiting the bombing pauses. While Washington intended these as a sign of good faith in the bargaining process with the North Vietnamese, Hanoi used the respite in the bombing to reconstitute their air defenses and even increase its lethality.[134] Hanoi also exploited the pauses by sending increased amounts of men and materiel into the South.[135]

Increased North Vietnamese air defense capability, along with the restrictions limiting attacks against it, prevented the United States from establishing air supremacy over North Vietnam. Current Air Force doctrine states that air superiority "is the degree of dominance that permits friendly land , sea, and air forces to operate at a given time and place without *prohibitive* interference by the opposing force" and air supremacy as "that

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[133] William C. Westmoreland, *A Soldier Reports* (Garden City, N.Y.: Doubleday & Company, Inc, 1976), 120.

[134] Vogt, as quoted in Partridge, et. al., 70.

[135] Tilford, 116.

degree of superiority wherein opposing air and space forces are *incapable of effective interference* anywhere in a given theater of operations."[136] While the United States achieved air superiority over North Vietnam, for the most part, it was unable to achieve air supremacy because there were times and places where the North Vietnamese were able to put up effective resistance. The NVAF used a strategy of air denial, which meant that the U.S. had to maintain its freedom to attack targets. Despite all the advantages held by American airpower, the NVAF still held the tactical advantage because it could engage the U.S. aircraft at times and places of its choosing. This resulted in a reduction of the bombing's intensity because U.S. aircraft were sometimes forced to jettison their ordnance prior to reaching their targets.[137] Furthermore, since American airpower was not allowed to destroy the North Vietnamese air defenses outright, U.S. aircraft constantly had to penetrate this dangerous air defense net. And the North Vietnamese proved to be a crafty adversary. As the U.S. neutralized one part of the air defense net, through improvements in either technology or doctrine, the North Vietnamese shifted their emphasis to another part of the system.[138]

There are two points to consider from this that are related to gradualism. While the North Vietnamese resistance was not prohibitive, it did at times force U.S. aircraft to jettison their ordnance prematurely or to bomb with reduced accuracy. And since some of the targets were not attacked and destroyed at the time when they needed to be for the planned compellent effect, the lack of air supremacy diminished airpower's compellent capability against the North.

Furthermore, since the United States did not gain air supremacy over North Vietnam and had to constantly fight to maintain its air superiority, an important psychological effect resulted. A recent study of the psychological impact of airpower strongly suggests that if a nation can establish air supremacy over an adversary's territory, and then conduct air operations over that adversary with impunity, the resulting feeling of impotence experienced by the adversary's military and civilian populations

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[136] Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine*, September 1997, 29. Emphasis added.

[137] Thomas C. Hone, "Southeast Asia," in *Case Studies in the Achievement of Air Superiority*, ed. Benjamin Franklin Cooling (Washington, D.C.: Center for Air Force History, 1994), 537. For an explanation of how the NVAF conducted its air denial strategy, see Young, "Fishbed Hit and Run."

[138] Hone, 555.

will be psychologically damaging to them and is likely to make them less willing to continue to provide their full support to the conflict.[139] Since the United States could not establish air supremacy over North Vietnam, and had to constantly struggle to maintain its air superiority, these psychological effects did not occur. Moreover, it is plausible that the reverse occurred and that the military and the civilian population drew considerable encouragement from seeing the downing of U.S. aircraft and the parading of captured U.S. airmen through villages in the countryside, which in turn increased their will to resist.

Another way the graduated use of airpower may have encouraged the military and the civilian population to resist was that the incremental increases in the intensity of the attacks allowed the military and civilians to adjust to the effects of the bombing. Historical and experimental evidence suggests that a population's expectations about bombing play a large part in their reaction to it. If the effects of the bombing are less severe than expected, then a population will be encouraged about the prospect of continuing the war. Conversely, if the bombing's effects are much worse than initially expected, then the bombings will significantly discourage the population.[140] Early in Rolling Thunder, minimal air attacks far away from the cities, as demanded by gradualism, in all likelihood would have led the population to conclude that a war with the United States would not be as bad as they had feared. And as noted in Chapter Four, this effect would have encouraged them and led to their greater support for Hanoi's war effort.

One can infer a similar effect on the expectations of the North Vietnamese leadership. In the months prior to the beginning of Rolling Thunder, the United States conducted a public and private campaign to compel the North Vietnamese. One of the private efforts was Washington's use of a Canadian diplomat, J. Blair Seaborn, to communicate its intentions to the North Vietnamese and to receive communication from Hanoi. In a session on 18 June 1964 with North Vietnamese Premier Pham Van Dong, Seaborn conveyed a message from Washington that contained the explicit threat that if

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[139] Group Captain A. P. N. Lambert, RAF, *The Psychology of Air Power* (London: Royal United Services Institute for Defense Studies, 1995), 85-93.

the conflict escalated, the U.S. would inflict the "greatest devastation" on the North.[141] This, coupled with the other threats that Washington made in the public arena, could very well have led the North Vietnamese leadership to expect that the initial military strikes would be intense and devastating. But when sustained reprisals began the following March, their graduated nature would almost certainly have been significantly less intense than Hanoi expected. Like the civilians and the military, the graduated application of airpower led the leadership to believe that a war with the United States would not be as bad as they had feared. And from the psychological discussion of the previous chapter, it would then have taken a lot of contrary evidence to force the North Vietnamese to believe otherwise.

Rolling Thunder demonstrated that the restraints placed on the use of airpower in deference to the diplomatic effort severely limited airpower's coercive and psychological impact on the North Vietnamese. By not allowing airpower to establish air supremacy over North Vietnam, Washington robbed airpower of one of its most damaging compellent impacts—the psychological effect of knowing that aircraft are flying above you and that there is nothing that you can do to stop them. Instead of imposing this feeling of impotence on the leadership, military, and civilian population, U.S. airpower's lack of ability to hurt the North Vietnamese provided a source of encouragement to them.

Knowledge of the Adversary's Important Assets

The ancient Chinese military theorist Sun Tzu may have been the first to write about the importance of knowing the adversary:

> One who knows the enemy and knows himself will not be endangered in a hundred engagements. One who does not know the enemy but knows himself will sometimes be victorious, sometimes meet with defeat. One who knows neither the enemy nor himself will invariably be defeated in every engagement.[142]

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[140] Martin L. Fracker, "Psychological Effects of Aerial Bombardment," *Airpower Journal* 6, no. 3 (Fall 1992), 58; see also Irving L. Janis, *Air War and Emotional Stress: Psychological Studies of Bombing and Civilian Defense,* 1st ed. (Westport, Conn.: Greenwood Press, 1951), 123-5.

[141] Wallace J. Thies, *When Governments Collide: Coercion and Diplomacy in the Vietnam Conflict, 1964-1968* (Berkeley, Calif.: University of California Press, 1980), 37.

[142] Sun Tzu, *The Art of War,* trans. Ralph D. Sawyer (Boulder, Colo.: Westview Press, 1994), 179.

This insight from more than 2,000 years ago is still applicable to modern warfare.

One of the tenets of Schelling's theory of gradualism is that to compel an adversary through military action, you must threaten what he values. Implicit in this statement is the idea that one does actually know what an adversary values. Needless to say, if a government is unable to determine what the adversary values, its actions will not be persuasive, or compellent.

Did the Johnson Administration correctly identify what the North Vietnamese valued the most? The Joint Chiefs believed they had. During the planning prior to the authorization for Rolling Thunder, the JCS proposed a quick and devastating attack against a set of 94 targets, all aimed at destroying North Vietnam's industrial and warmaking capacity. They believed that since North Vietnam's warmaking base was so small and since Hanoi had invested so much in it, that its violent and swift destruction would break Hanoi's will to continue supporting the Viet Cong. On the other hand, Johnson's civilian advisors recommended a graduated approach, believing that Hanoi would see the impending destruction of its industry as a grave threat, and would therefore concede to Washington's demands.[143]

The reality of the situation was quite different. By the end of Operation Rolling Thunder, U.S. airpower destroyed virtually all of North Vietnam's industrial capacity, yet this did not compel Hanoi to change its policy towards the South. In reality, while the North probably did value its industry, it was not sufficiently valuable to them to warrant conceding to Washington's demands. Where did the Air Force go wrong? The Air Force's mistake in misidentifying what the North Vietnamese valued was a product of its doctrinal heritage. At the center of Air Force doctrine at the time of Operation Rolling Thunder was the idea that the strategic bombardment of an adversary's industrial and warmaking capacity would cause him to quickly give up the fight.[144]

Two basic assumptions underpin this doctrine. The first is that the United States

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[143] Lewy, 374. Robert Gallucci paints a sobering picture of how Johnson's advisors came to recommend the policy of sustained reprisal against the North Vietnamese. Johnson's advisors could not achieve consensus on the either the operation's objectives or the means to achieve them. "The policy was a collection of actions that could be agreed upon even if there was underlying disagreement over what would be accomplished by particular acts." These differences between the advisors manifested themselves as the ever-changing nature and objectives of U.S. involvement in Vietnam. Gallucci, 35-45.

[144] Drew, 26-27. For a good, succinct history of the evolution of American airpower doctrine, see Drew, 14-27.

would fight an unlimited war for total victory, in other words, to destroy the enemy. The Air Force believed that the destruction of the adversary's ability to fight through the strategic bombardment of his industrial capacity would quickly lead to his capitulation. This reality of *actual* destruction is much different from gradualism's *threat* of destruction. The second assumption is that the United States would fight a modern, industrialized country. Since an adversary's industrial capability would play a critical role in a total war, the Air Force's strategic bombing doctrine was ready to play the key role in its destruction.[145] Since the Air Force perceived that North Vietnam's small industrial base was so valuable to Hanoi's war effort, its destruction would quickly limit the North's capability of assisting the Viet Cong in the South.

But destruction of its industrial base did not stop Hanoi from assisting the Viet Cong in their armed struggle. Another look at the rational decision making equation, developed in Chapter Four, may provide some insight. The equation

$$\text{Costs}_N - \text{Benefits}_N > \text{Costs}_C - \text{Benefits}_C$$

shows that if the costs of non-compliance, Costs_N, are high, then the benefits of non-compliance, Benefits_N, must also be high if the adversary is to continue his non-compliance. Hanoi's main benefit for non-compliance was continuing towards its goal of reunifying Vietnam under the Communist government in the North. How important was this goal to the government in Vietnam? It appears that the ruling faction in the Politburo at the beginning of Rolling Thunder in 1965 was deeply committed to their goal of reunifying the country. Not only had they worked for 25 years to throw off the yoke of French colonial rule and reunify the country, but the ruling faction under Le Duan had also spent the previous ten years persuading the Politburo that Hanoi needed to help the cause of reunification in the South through armed, vice political, struggle. These men had devoted most of their lives to this cause, as well as their political reputations; it was asking a lot of them to give up something that they had worked towards for so long, and believed they were close to achieving in early 1965.[146]

The rational decision making equation highlights another variable that is important to consider, the costs of compliance (Costs_C). If these become too great for the

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[145] Drew, 27.
[146] Thies, 262.

government that is being compelled, a compelling nation may again find it difficult to succeed. In the case of Vietnam, compliance with U.S. demands would have exacted a high price from the Le Duan faction. These men had invested much time and energy, as well as political capital, in establishing the policy of North Vietnam's assistance to the Viet Cong in their armed struggle. It would have been disastrous for this faction to reverse course on a policy whose ends were so important to all members of the Politburo.[147] To make such a concession would have been a tacit admission that they had been wrong in the first place; such an admission would have jeopardized not only their position within the Communist Party hierarchy, it might well have threatened their lives.[148]

While the equation of rational decision-making serves as a good illustration of a rational decision-making process, most governments do not follow this model. A seminal work explaining government decision-making, Graham Allison's *Essence of Decision,* outlines three different models to explain how governments make decisions. The first is the Rational Actor Model (Model I). In this model, a government action is the result of a rational choice based on an economic model of cost-benefit analysis. The equation of rational decision-making mirrors this concept. Model II is the organizational decision model, where a government action is the result of an organizational output or process. The last example, Model III, is the model that explains how a government action is the result of a political process within the government.[149]

The North Vietnamese Poltiburo's decision-making process was not truly based on the Rational Actor Model alone. Le Duan's faction in the Politburo, faced with committing political suicide if it decided to concede to the American demands, would have been motivated as much by political self-preservation to remain in power as any other goal; this made them difficult to compel. Allison's Model II, decision as a result of an organizational process, explains this. Moreover, the Politburo was also involved. Its decision to first agree to support the Viet Cong in an armed struggle, and then to continue this support despite the punishment that the United States inflicted on North Vietnam,

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[147] The different factions within the Politburo only differed about the means of reunification, not the ends.
[148] Thies, 262.
[149] Graham T. Allison, *Essence of Decision: Explaining the Cuban Missile Crisis* (New York: HarperCollins, 1971).

probably resulted from some form of political compromise amongst the various factions. This is illustrative of Allison's Model III, a government action that is the result of a political action. The North Vietnamese Politburo's decision not to concede to American demands can be seen, then, as being primarily Model I in nature, but with some Model II and Model III influences affecting the decision.

If knowledge of the adversary's government is so important, what did the Johnson Administration know about North Vietnamese government? Maxwell Taylor, an influential advisor to President Johnson as the U.S. Ambassador to Saigon, admits:

> In 1965 we knew very little about the Hanoi leaders other than Ho Chi Minh and General Giap and virtually nothing about their individual or collective intentions. We were inclined to assume, however, that they would behave about like the North Koreans and the Red Chinese a decade before; that is, they would seek an accommodation with us when the cost of pursuing a losing course became excessive. Instead, the North Vietnamese proved to be incredibly tough in accepting losses which, by Western calculation, greatly exceeded the value of the stake involved.[150]

Taylor also confesses that he "was left wondering about the soundness of judgement" in Hanoi's decision-making,[151] specifically referring to the attack by North Vietnamese patrol boats against U.S. destroyers in the Gulf of Tonkin in August 1964. What Taylor did not realize at the time was that this incident did not occur at Hanoi's instigation, but resulted from a local commander's initiative.[152] While the rational actor model does not explain this, it makes perfect sense when viewed from the perspective of Allison's Model II.

Since the principals in Washington did not know much about the government in Hanoi, they fell back to the model that was familiar to them. They (Washington)

> imputed to the North Vietnamese an economic motivation, a mechanistic calculation of costs and benefits, a logical willingness to lower demand as price rose. It was as if General Giap would manage a revolution the way McNamara managed the Pentagon. It implicitly assumed that Vietnamese reunification was a relative value to Hanoi that could be relinquished as the pain threshold rose, rather than the absolute value that it was.[153]

The history from Vietnam demonstrates that when a government is contemplating using military force in a compellent campaign, it is important that the government have a

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[150] Maxwell D. Taylor, *Swords and Plowshares* (New York: W. W. Norton & Company, Inc, 1972), 401.
[151] *Ibid.,* 319.
[152] McNamara, et al., *Argument Without End*, 185.
[153] Gelb and Betts, 139.

better understanding of its potential adversary than just a knowledge of what it values the most. The government must also know the adversary's goal from which it will be trying to dissuade it, as well as how important that goal is to the adversary. If the achievement of the goal is very important to the other government, then it may be willing to withstand a significant amount of punishment. For the North Vietnamese, the goal of the reunifying the country through an armed struggle may well have been its most valued possession. A government contemplating a compellent campaign must also understand its adversary's decision-making process. No government, even a dictatorship, is completely Rational Actor Model in nature. There will be some Model II and Model III influences that will affect the adversary's decision making, for better or worse. A government contemplating a compellent action must be sure to understand this part of the adversary's makeup before it embarks on an action as risk-filled as a graduated military operation.

The Military Instrument's Ability to Communicate

Much has been written on the difficulties that governments have experienced trying to execute something as complex and difficult as a coordinated diplomatic and military campaign. Vietnam is no exception. A detailed examination of the U.S. government's problems in trying to execute a coordinated diplomatic and military campaign against North Vietnam is beyond the scope of this paper.[154] Instead, this section focuses on just one piece: how well the military instrument performed as a means of communication during the conflict. In Chapter Two, one of the propositions derived from Schelling's view of gradualism is the importance of communication between adversaries in a compellence situation, communication that is often tacit. If airpower is to be used as a means of communication, then it is necessary to examine its ability to do just that.

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[154] For an in-depth look at the problems the Johnson Administration experienced in trying to implement a coercive campaign against North Vietnam, see Thies, Chapter Six, "The Government as Coercer: Idioms and Orchestration," 284-348.

Johnson's advisors planned to use airpower as a means of communicating their intent to Hanoi at the beginning of Operation Rolling Thunder. While Johnson's military and civilian counselors had significant differences of opinion about the operation's objectives as well as the targets to be struck to support those objectives, civilian officials were almost unanimous about how to do it. They believed that gradually increasing the intensity of the air attacks would compel Hanoi to stop supporting the Viet Cong. To do this, the civilians advocated increasing the frequency and intensity of the airstrikes, increasing the sensitivity of the targets struck, as well as slowly moving the locations of the targets closer and closer to Hanoi. As one analyst neatly summarized the goal of this approach:

> It was *hoped* by Administration planners that the North Vietnamese would realize what was happening to them relatively early in the process and would thus agree to negotiate (on the Administration's terms) before the pressures became too intense, so as to preserve their meager industrial base.[155]

While this was a worthy goal for consideration in Washington, the actual execution differed significantly from this rational plan. Instead of sending the message to the North Vietnamese Politburo that the threat against its industrial base was increasing, the message that the first few weeks of Rolling Thunder transmitted was "very likely … confusing and misleading."[156] (See Appendix One). Instead of the strikes slowly progressing northward, the locations of the targets hopped around North Vietnam, close to Hanoi one week, close to the DMZ the next. There was no consistent pattern of increasing intensity reflected in either the numbers of sorties or in the types of targets struck. Finally, while the frequency of the strikes did increase, this effect was nullified by the policy of bunching the attacks against the fixed targets towards the beginning of the week and then flying armed reconnaissance patrols for the rest of week.[157]

This disparity between what was envisioned in Washington and what actually occurred demonstrates the difficulty of translating such a plan envisioned on paper to what is actually executed. While Johnson's advisors may have possessed a vision of what they wanted to do, by the time Johnson and his team picked the targets on a week-

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[155] Thies, 300. Emphasis added.
[156] *Ibid.,* 300.
[157] *Ibid.,* 300-307.

to-week basis, they were unable to replicate that vision into precisely orchestrated strikes under real world conditions.

Not only were there problems with translating the vision into operational reality, but airpower's limitations did not help the matter either. If airpower is being used to send a tacit or subtle message to an adversary, and this message is based on the number of sorties, the geography of the targets, or the sensitivity of the targets, it is important that airpower be able to strike these targets as the master plan dictates. It seems reasonable to conclude that, since the Johnson administration "*hoped* … that the North Vietnamese would realize what was happening to them," the message they were sending to Hanoi was subtle. The question that needs to be examined, then, is how effective was airpower at hitting and destroying the targets assigned to it?

The evidence of Rolling Thunder suggests that, at least in the early stages of the operation, a lack of sortie effectiveness contributed to the inaccurate transmission of the message that the Johnson administration was trying to send to the North Vietnamese. The evidence supporting this assertion can be grouped into three broad categories: bombing accuracy, organizational behavior, and weather.

Bombing Accuracy

When Operation Rolling Thunder began in early March 1965, the military's bombing accuracy was already being questioned at the highest levels in Washington. After the two Flaming Dart operations in early February 1965, Secretary of Defense McNamara received bomb damage assessment that did not reflect well on airpower: "with a total of 267 sorties (including flak suppression, etc.) directed against 491 buildings, we destroyed 47 buildings and damaged 22."[158] In response to this, McNamara sent a memorandum to the CJCS:

> Although the four missions left the operations at the targets relatively
> unimpaired, I am quite satisfied with the results. Our primary objective,
> of course, was to communicate our political resolve. This I believe we
> did. Future communication of resolve, however, will carry a hollow ring
> unless we accomplish more military damage than we have to date. Can
> we not meet our military objectives by choosing different types of targets,
> directing different weights of effort against them, or changing the

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[158] "Evolution of the War: The Rolling Thunder Program Begins," in *United States-Vietnam Relations, 1945-1967* vol. 4, C, 3 (Washington, D.C.: U.S. Government Printing Office, 1971), 64.

composition of the force? *Surely we cannot continue for months accomplishing no more with 267 sorties than we did on these four missions.*[159]

Bombing accuracies were indeed unimpressive. At the beginning of Operation Rolling Thunder, Air Force bomb CEP[160] was as high as 750 feet.[161] The United States Air Force began Rolling Thunder woefully unprepared to execute such an operation. Driving this unpreparedness was an emphasis within the Air Force during the 1950s to prepare for a total, nuclear war with the Soviet Union. This emphasis was not misplaced at the time: it resulted from the Eisenhower Administration's policy of massive retaliation and its focus on building the military's force structure with the nuclear weapon at its cornerstone.

The Kennedy Administration came into office in 1961 with a new idea of defense policy, flexible response, which called for the United States to increase its conventional military capability, sadly neglected during the 1950s, in order to provide the President with military options other than nuclear retaliation. Unfortunately, the Air Force was slow to respond. This is reflected in the 1964 edition of Air Force Manual (AFM) 1-1, *United States Air Force Basic Doctrine*. AFM 1-1 acknowledges the existence of conventional air operations and counter-insurgency operations (COIN). However, in comparison to the two pages the manual devotes to each of these types of operations, it spends over nine pages discussing "Employment of Aerospace Forces in General War" and "Employment of Aerospace Forces in Tactical Nuclear Operations."[162] Despite the emphasis that the Kennedy Administration placed on conventional warfare and COIN within flexible response, the Air Force was slow to realign itself to the desires of its political masters.

This continued emphasis on a "bankrupt"[163] doctrine had two significant results. Since the Air Force was wedded to the notion that the only way it could win a war was

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[159] Robert S. McNamara, Memorandum to Chairman, Joint Chiefs of Staff, 17 February 1965, in "Evolution of the War: The Rolling Thunder Program Begins," *United States-Vietnam Relations, 1945-1967* vol. 4, C, 3 (Washington, D.C.: U.S. Government Printing Office, 1971), 64. Emphasis added.

[160] Circular Error Probable: the radius of a circle where 50% of ordnance will land inside, and 50% will land outside.

[161] George Weiss, "Tac Air: Present and Future Lessons, Problems, and Needs," *Armed Forces Journal* 109, no. 1 (September 1971), 31.

[162] Air Force Manual (AFM) 1-1, *United States Air Force Basic Doctrine*, 14 August 1964.

[163] Drew, 48.

through strategic nuclear bombing, it was intellectually and doctrinally unable to propose any other strategy beyond strategic bombing to Presidents Kennedy and Johnson when they requested policy options for dealing with the insurgency in South Vietnam.

But there were two recent examples of successful counter-insurgency campaigns, the British effort in Malaya and the French in Algeria, that the Air Force could have turned to for guidance. These campaigns could have provided Air Force planners with a number of lessons about how airpower could support such a campaign: expect and prepare for a long campaign, understand the importance of joint-service action, use a simple command structure, and understand that airpower, while not decisive, still plays an integral role.[164] An Air Force proposal emphasizing a counterinsurgency campaign would not have guaranteed that Johnson and his advisors would have placed greater emphasis on counterinsurgency operations in the South, or that such an emphasis would have resulted in the pacification of the Viet Cong. But such an option, even if presented alongside the strategic bombing option, would at least have given the Administration a set of choices about how to solve the problem that they faced, and it might have resulted in the United States pursuing a radically different course in Vietnam.

The second result of the Air Force's emphasis on a nuclear warfighting doctrine was the force structure with which it went to war in Vietnam. The mainstay of the Air Force's bomber force in Vietnam was the F-105 Thunderchief, which flew more than three quarters of the Air Force's strike sorties during Operation Rolling Thunder.[165] Built as nuclear fighter-bomber, the F-105 was designed to deliver a nuclear warhead. Since the accuracy needed for the successful delivery of a nuclear weapon is not as stringent as for conventional munitions, the aircraft's limitations in conventional munitions delivery went a long way towards hindering sortie effectiveness.

While the aircraft must accept some of the blame, aircrew training must also bear some responsibility: the emphasis on aircrew training for nuclear combat also limited sortie effectiveness. But it was not due to a lack of training. One analyst has noted that it was not the airmanship of the crews, many of whom had over 1,000 hours in their aircraft when Rolling Thunder began, but rather a poor mix of skills that crews brought to Vietnam after training for nuclear combat for many years.[166]

Because of the emphasis that the Air Force placed on the nuclear mission in the 1950s, its force structure was initially unable to support a conventional campaign like Rolling Thunder, a campaign where sortie effectiveness was unusually important because

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[164] Diego M. Wendt, "Using a Sledgehammer to Kill a Gnat: The Air Force's Failure to Comprehend Insurgent Doctrine during Operation Rolling Thunder," *Airpower Journal* 4, no.2 (Summer 1990), 58.
[165] Delbert Corum, "The Tale of Two Bridges," in *Air-War Vietnam* (Indianapolis, Ind.: Bobbs-Merrill, 1978), 12.
[166] Lambeth, 37.

each sortie was a part of a subtle message being communicated to Hanoi. After several years of combat, intensive training for conventional missions, and changes in procedures, combat CEPs dropped to 365 feet, which was significantly better.[167] But by then, the Johnson administration was no longer trying to send subtle messages to the North Vietnamese through airpower.

Organizational Behavior

Organizational behavior also contributed to the diminishment of sortie effectiveness during Operation Rolling Thunder. According to Graham Allison, organizations will set their goals within the constraints defining acceptable performance. For the military services, "the constraints are formulated as imperatives to avoid roughly specified discomforts and disasters."[168] The disasters to avoid include: a decrease in dollars budgeted, a decrease in manpower, a decrease in the number of key specialists, a reduction in the percentage of the military budget allocated to the service, the encroachment of other services into that service's roles and missions, and inferiority to an enemy weapon of any class.[169]

How did these imperatives affect service behavior in Vietnam? At the time of Rolling Thunder, the Office of the Secretary of Defense measured performance through quantitative indicators, such as the number of sorties flown, the number of tons of bombed dropped, and the number of targets struck. Since the two prominent airpower services, the Air Force and Navy, perceived that McNamara was evaluating their performance through these quantitative indices, they reacted in a manner that made the most sense organizationally: they tried to make sure that their quantifiable indicators were at least equal to, if not better, than those of the other service. Because they feared a loss of prestige and budget authority, the services had tremendous incentive to emphasize sortie generation over sortie effectiveness.[170]

This imperative for sortie generation manifested itself in a perverse way. Since it believed that the next war would be nuclear and also because of the technology that was coming on line in the early 1960s, the Air Force stopped buying conventional iron bombs. As a result of this and the escalatory and prolonged nature of Rolling Thunder, a munitions shortage soon developed.[171] Because both the Air Force and Navy believed that the Office of the Secretary of Defense evaluated them on their sortie generation, neither service ever cancelled sorties because of the munitions shortage. Instead, one official report noted that in some cases, "the optimum weapons necessary for the achievement of maximum damage per sortie were not used when local shortages required substitution of alternate weapons."[172] As one veteran later commented: "we were at one

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[167] Weiss, 31.
[168] Allison, 82.
[169] *Ibid.*
[170] For an in-depth discussion of this phenomenon, see Gallucci, 80-86.
[171] Tilford, 114.
[172] U. S. G. Sharp, "Report on Air and Naval Operations Against North Vietnam and Pacific Command-wide Support of the War, June 1964-July 1968)," in Admiral U. S. G. Sharp and General W. C. Westmoreland, *Report on the War in Vietnam* (Washington, D.C.: U.S. Government Printing Office, 1968), 20.

time sending kids out to attack a cement and steel bridge with nothing but 20-millimeter cannon, which is like trying to knock down the Golden Gate Bridge with a slingshot."[173]

Since aircraft attacked targets with less than the "optimum weapons necessary for the achievement of the maximum damage per sortie," sortie effectiveness was degraded. Moreover, the United States was endeavoring to send a subtle message to North Vietnam, a subtlety based on targets being destroyed at prescribed times. If the lack of ordnance prevented these targets from being destroyed, then the fidelity of the message would have been degraded, a consequence of the perverse actions of organizations bent on their own survival.

Weather

Weather is the final factor that hindered sortie effectiveness and airpower's ability to communicate a message. If a government is using airpower to transmit a message and part of the subtlety of the message deals with the targets that are struck, if the weather does not allow airpower to strike the intended target, then the message will not get through in the manner that the sending government expected.

Unfortunately for airpower, the weather over Vietnam is not conducive to visual deliveries of munitions for most of the year. The climate in the southern part of the country is tropical; in the north, the climate is monsoonal, with a hot, rainy season lasting from May to September, and the dry season occurring from mid-October to mid-March.[174] In other words, the weather in North Vietnam would have made it difficult for the effective use of visually-delivered munitions for at least five months out of the year; and in the worst case, this could have been as high as eight months.

One way to mitigate the effects of the weather is an all-weather capability for delivering air-to-surface munitions. At the time of Rolling Thunder, neither the Air Force nor the Navy had much of an all-weather air-to-surface munitions delivery capability, at least one with any accuracy. The best method they possessed for all-weather delivery was a radar-aimed bomb. A few aircraft had this capability, specifically the Air Force's B-52 and the Navy's A-6. However, while the avionics for a radar-aimed delivery would have been sufficiently accurate for delivering nuclear weapons, the same avionics were inadequate for the delivery of conventional munitions against point targets.

The military's lack of capability to mitigate the effects of Vietnam's climate

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[173] Jack Broughton, *Thud Ridge* (Philadelphia, Pa.: J. B. Lippincott Company, 1969), 79.
[174] Central Intelligence Agency, *World FactBook 1999;* on-line, Internet, 6 March 2000, available from http://www.cia.gov/cia/publications/factbook/index.html.

hindered sortie effectiveness when the weather was bad. This would not have been a problem all year, but monsoon season was sufficiently lengthy that this became a significant impediment to sortie effectiveness and the effective communication of Washington's intended message.

Airpower was not an effective means of communicating Washington's message to the government in Hanoi. The Air Force's nuclear doctrine and force structure that produced a force poorly designed and prepared for a conventional air war, organizational considerations that emphasized sortie generation, and weather all contributed to reduced sortie effectiveness over North Vietnam. And since the Johnson administration's subtle message to Hanoi depended in large part on airpower striking a particular target at a designated time, less than optimal sortie effectiveness degraded the accurate transmission of this message.

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Challenges to Conventional Wisdom
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Gradualism and Rolling Thunder

The evidence from Rolling Thunder challenges the conventional wisdom regarding the use of airpower in Vietnam, specifically that the graduated use of airpower was an important reason contributing to airpower's failure in Rolling Thunder. The graduated use of airpower in this operation was not the reason why airpower failed to compel the North Vietnamese to stop supporting the Viet Cong insurgency in South Vietnam. It appears that, since the North Vietnamese Politburo's ruling faction held the goal of reunifying Vietnam through armed struggle so strongly, the United States did not possess the means, or could not use the means that it did have, to compel the North Vietnamese leadership to stop Hanoi's support of Viet Cong's armed struggle in the South in early 1965. Even if Washington had used its more intensive military means, it is doubtful that that these would have compelled Hanoi, while in all likelihood provoking a Chinese intervention. Moral reasons prevented the United States from dropping nuclear weapons. The American people probably would have found the economic, human, and political costs of a ground invasion of the North to be too great for the ends that it would have gained. It is even doubtful that a Linebacker II, "hard-knock"-style of operation,

conducted in 1965, would have worked.[175] If an all-out air campaign like Linebacker II would not have compelled Hanoi, it is not surprising that a graduated use of airpower did not work.[176] Given the North Vietnamese Politburo's commitment to reunify the country, it is doubtful that any strategy or military means the U.S. could have used would have worked.

But why was gradualism so roundly condemned based on the Vietnam experience? The idea of a graduated escalation in the use of force is antithetical to the western way of conducting war. Leading military and airpower theorists all proclaim the importance of concentration, economy of force, and surprise in the attack. The idea of not giving an adversary a chance for a fair fight is a prevalent theme pronounced by Air Force leaders today. The graduated use of force, to allow the adversary an opportunity to change his mind, is very different from the idea of brute force destruction of an adversary's army before it conquers your entire country.

The actual planning and execution of Rolling Thunder was the source of much frustration both for air commanders and for the crews that flew the missions. Target selection in Washington that made little sense to the crews flying these dangerous missions was one source of frustration. Sending crews out with partial bomb loads, because the services perceived that Secretary of Defense McNamara's incentive system for the evaluation of the services' wartime performance stressed the numbers of sorties flown and tons of ordnance dropped over sortie effectiveness or aircraft losses, is also a source of justified anger. But are these problems really linked to the idea of gradualism, or are they systemic issues related to a military system that was learning how to fight a limited war for limited objectives and with a military establishment that was not doctrinally or intellectually prepared to fight it?

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[175] President Nixon unleashed Linebacker II in December 1972 to compel Hanoi to return to the bargaining table. It was an intense air attack that did not have to suffer under the same political constraints as had Rolling Thunder, and it brought the North Vietnamese back to the negotiations. But as Mark Clodfelter points out in *The Limits of Airpower*, there were two reasons why Linebacker II worked in 1972. The strategic situation at the time had changed because of the Nixon Administration's rapprochement with the Moscow and Beijing, effectively isolating Hanoi from its two patrons. Furthermore, the Nixon Administration used Linebacker II to achieve a very limited objective: to compel the North Vietnamese to return to negotiating table and sign an agreement whose terms to which they had already agreed.

[176] This is the same logic that Robert Pape uses to conclude that a Risk strategy, based on Schelling's ideas of gradualism, does not work. However, Pape, like many other critics of gradualism, concludes that gradualism does not work based solely on the evidence of Rolling Thunder. See *Bombing to Win: Air Power and Coercion in War* (Ithaca, N.Y.: Cornell University Press, 1996), 174-210.

Critics may condemn gradualism simply because it failed and because America paid a steep price in blood and treasure trying to make it work in a situation where a compelling argument can be made that even a "hard-knock" would not have worked. Since Vietnam was a war that American did not win, there must be a reason for it. And gradualism, so contrary to the western way of war, as well as being so novel, became one of many scapegoats.

Graduated escalation was not the cause for airpower's failure in Rolling Thunder. The failure resulted from the nation's attempt to achieve a near-impossible goal within a system of constraints that severely limited the available options. The graduated use of airpower is merely a manifestation of those constraints.

Theory of Gradualism

The planning and execution of the Rolling Thunder provide evidence that calls into question two of gradualism's theoretical propositions. The first is the notion that a graduated campaign must be coordinated at the highest levels of government. There are two facets of this, the first being how closely the political leadership should control the use of the military instrument. As has been previously shown, Johnson's advisors envisioned a plan in which airpower would be used to gradually increase the threat to the North Vietnamese industrial base. Yet when it came to turning this vision into a targeting plan, Johnson and his advisors were unable to translate this successfully into the reality that they faced. Why did Johnson and his civilian advisors not ask an experienced air commander for assistance in building the campaign plan that would be based on the goal of threatening North Vietnamese industry? History suggests two reasons why this was the case. The first is that Presidents Kennedy and Johnson, and their advisors, did not trust the military. Kennedy, in the aftermath of the Cuban Missile Crisis, is reported to have declared that "the first advice I am going to give my successor is to watch the generals and to avoid feeling that just because they were military men their opinions on military matters were worth a damn."[177] Johnson echoed these sentiments: "And the generals. Oh, they'd love the war, too. It's hard to be a military hero without a war. Heroes need battles and bombs and bullets in order to be heroic. That's why I am

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[177] John F. Kennedy, as quoted in McMaster, 28.

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suspicious of the military. They're always so narrow in their appraisal of everything. They see everything in military terms."[178] McNamara also came to believe that any decision based solely on "military experience" was questionable.[179] These men's evident contempt of the military, plus their confidence in the correctness of their own rational ways of waging war, prevented them from bringing in an experienced air commander to help plan Rolling Thunder.

Coupled with this distrust were the consequences of failure that Johnson and his advisors believed they faced in Vietnam. Perhaps the greatest fear that the Johnson administration held was that American military intervention might provoke a Chinese intervention, which might then spiral out of control to a nuclear confrontation with the Soviet Union. This possibility, and the resulting threat to the very existence of the United States, was a consequence that they did not want to deal with. And they saw the military as proposing options that could quickly take them down this path towards nuclear confrontation with the Soviets. National survival, coupled with their distrust of the military, played a significant role in the Johnson administration's unwillingness to bring in an air commander to assist with planning Rolling Thunder.

In defense of Johnson and his advisors, one must also examine whether an air commander could have planned such a campaign. At the time, Air Force senior officers were steeped in the doctrine and the history of strategic bombardment. As such, it is questionable whether they would have been intellectually and doctrinally capable of planning the relatively subtle campaign that Johnson's advisors envisioned. Air Force Chief of Staff Gen Curtis LeMay's continual insistence on the "hard-knock" option is but one example supporting this assertion. It also demonstrates that the military leadership was not in tune with the Johnson administration's political realities.

All three of these conditions--the Johnson administration's lack of trust in the military, the potential threat to American security if the Vietnam spiraled out of control, and the apparent lack of political savvy on the part of the senior military officers--are important conditions that one must consider when examining the application of military

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[178] Lyndon B. Johnson, as quoted in Doris Kearns, *Lyndon Johnson and the American Dream* (NewYork: Harper & Roe, 1976), 252.

[179] McMaster describes McNamara and his civilian staff's relationship with, and distrust of, the military. See especially McMaster, 24-41, 62-106.

force in Vietnam. And these conditions either directly or indirectly contributed to the Johnson administration's belief that it needed to control the application of airpower in Vietnam from the White House.

The second facet of gradualism's proposition that a compellent campaign must be controlled at the highest level is that the military and diplomatic efforts must be closely coordinated. However, the record of the Johnson administration's attempts to do this during Vietnam suggest that this is difficult, if not impossible, for a government like the one in Washington to do successfully. Two examples illustrate their problems. During the fifteen months prior to the beginning of Rolling Thunder, the Johnson administration attempted to coordinate a three-track approach to persuade the North Vietnamese to stop their support of the Viet Cong. These tracks consisted of the U.S.-led covert war, the planning for and threats of overt military action, and the carrot and stick approach to diplomacy (promises of aid and retaliation) that the administration conducted. Despite the goal that these efforts be coordinated, they often worked at cross-purposes, with the result of one track negating the effort of another.[180] The second example of these difficulties occurred in December 1966. At this point, the State Department was working to open up direct talks with the North Vietnamese in Poland. While this diplomatic effort was underway, however, military commanders in Southeast Asia saw a period of good weather over the North as an opportunity to launch one of the most intense attacks against Hanoi seen to that point in the war. Unsurprisingly, the North Vietnamese leadership saw this air attack as inconsistent with trying to establish direct talks with Washington, or viewed it as an excuse to not hold talks.[181] Either way, what this does demonstrate was how the lack of coordination between the two tracks hindered the work of one of them.

This discussion suggests the difficulties that a government can experience in trying to translate theory into a practical reality. The theory of gradualism suggests that the application of military power must be controlled at the highest level. But this led the Johnson administration to attempt to plan a strategy that the military instrument's limitations would make it difficult for them to do. Moreover, the Johnson

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[180] Thies, 293-5.
[181] *Ibid.,* 311.

administration's lack of trust in the military and the stakes that they believed they might ultimately be playing for prevented them from listening to their military advisors, who, as it has been suggested, may not have been politically or doctrinally prepared to support such a plan anyway. Moreover, theory suggests the importance of coordination between the diplomatic and military efforts. But the realities of Vietnam suggest the difficulties that a government of the size and nature of the one in Washington has when it attempts to do this.

The second theoretical premise that the history of Rolling Thunder calls into question is how well the military instrument can be used as a means of communicating with an adversary. Airpower's inherent limitations at the time of Rolling Thunder hindered its effective application as a means of communication between the Washington and Hanoi. The message that Washington was attempting to send to Hanoi was subtle, and it relied on targets being attacked and destroyed in sequence to maximize the effectiveness of its transmission. Airpower's initial efforts exposed its limitations, and sortie effectiveness reflected them: the difficulties airpower initially experienced in bombing accuracy, organizational behaviors that resulted in aircraft being launched against targets without the maximum ordnance load, and problems of attacking targets in a climate where rain is a dominant climactic feature for a significant portion of the year. At the time of Rolling Thunder, airpower was a heavy, blunt instrument. This, combined with the manner in which it was controlled, which was anything but dexterous, made it an unwieldy tool that was difficult to use to communicate a subtle message. It is analogous to planning to cut a patient with a scalpel, and then bringing out an axe to make the incision. American airpower at the time of Rolling Thunder was the product of the theoretical ideas of Clausewitz and its evolution through the classical airpower theorists and through its experience in the Second World War and the development of American strategic nuclear doctrine in the 1950s. As such, it was optimized for the delivery of nuclear weapons on either strategic or tactical targets—neither of which required the capability for the great accuracy that is necessary for the transmission of a subtle message.

The last challenge to gradualism's theoretical basis comes from a facet of the military instrument for which the theory does not account: the inherent psychological

compellent effects of airpower, and the dangers of its misapplication. One of airpower's most compellent effects is not necessarily its ability to destroy targets, but the psychological impact that it can have on an adversary. At its core, compellence is an attempt to get an adversary to change his mind, and psychology plays a big part in this. While the threat to valued assets may be the primary mechanism to compel an adversary, airpower also has the capability of imposing a tremendous psychological effect on the adversary—the feeling of impotence. U.S. airpower was never allowed to gain air supremacy over North Vietnam. As a result, the North Vietnamese leadership, military, and civilian population were never placed in the position of looking up into the sky, seeing enemy aircraft operating with impunity, attacking whatever assets it wanted, whenever it wanted. This feeling of imposed impotence in the past has proven to be an important weapon if airpower can achieve it.

There is an important tension here. Gradualism calls for measured attacks against the adversary, yet the best way to achieve air supremacy and impose its psychological effect is through the rapid suppression of the adversary's air defenses. But the achievement of air supremacy through the destruction of an adversary's air defenses does not mean that airpower will also wantonly destroy everything else that the adversary values—it is only an enabler that will allow airpower to make a more credible *threat* to the adversary's valued items. The psychological impact of an adversary who sees himself impotent in the face of such a threat, coupled with the threat of the destruction of its important assets, could produce a synergistic compellent effect on an adversary.

Conclusion

A close examination of Rolling Thunder and the graduated use of airpower strongly challenges the conventional wisdom that the graduated use of airpower contributed to the failure of the operation. A compelling case can be made that any military strategy implemented by the Johnson administration would not have brought a lasting peace favorable to the United States because the North Vietnamese leadership's goal of reunifying Vietnam was too strong. While this implies that any discussion of the graduated use of airpower in Rolling Thunder is academic, lessons learned from such study still can provide valuable insight into this strategic option.

The evidence of Rolling Thunder also suggests some problems of translating the theory of gradualism into reality. Close control of the military and diplomatic efforts is difficult due to the nature and the size of the national security apparatus in Washington. More information about an adversary is needed beyond what items an adversary values in his country. And airpower at the time of Rolling Thunder was not a suitable means of communicating a subtle message.

CHAPTER SIX

OTHER EXAMPLES OF GRADUALISM: TWO CASE STUDIES

Historical examples clarify everything and also provide the best kind of proof in the empirical sciences.

Carl von Clausewitz

Introduction

Critics roundly condemned gradualism after its application in Operation Rolling Thunder. Yet gradualism seems to have been successful decades later during Operation Allied Force over Kosovo. Perhaps critics drew the wrong conclusions regarding gradualism's efficacy based solely on the evidence of Operation Rolling Thunder. At this writing, it is too early to glean any solid conclusions from Allied Force, so an analyst must look elsewhere to broaden the evidentiary base. Because Schelling codified his ideas about gradualism in the late 1950s and early 1960s, the base of evidence would seem limited to the graduated air operations that have occurred since then—Rolling Thunder and Allied Force. However, there were graduated air operations, even if they were not planned to be that way. Even though an air commander may not have intended for an operation to be graduated, circumstances may have dictated that it be graduated, at least in effect.

There are at least two air operations, in addition to Rolling Thunder, that can be used to evaluate gradualism's efficacy. One such case is the Israeli-Egyptian War of Attrition that occurred between March 1969 and August 1970. The second is Operation Deny Flight, the NATO air operations in support of UN mandates in Bosnia, which lasted from October 1992 to September 1995. Deny Flight includes Operation Deliberate Force, which was NATO's use of airpower to compel the Bosnian Serbs to respect the UN established safe areas in Bosnia. The case studies that follow will describe these operations in narrative form. After these case studies, the chapter will evaluate how well they represent the graduated use of airpower, as well as draw conclusions about gradualism from them.

The War of Attrition

Although the War of Attrition between Israel and Egypt did not begin until March 1969, the seeds of this conflict lay in the ruins of the Arab armies at the end of the 1967 Six-Day War.[182] Not only had the Israeli Defense Forces (IDF) soundly defeated the Egyptian military during the brief war, but Israel also captured the entire Sinai Peninsula—a major blow to Egypt's leader, President Gamel Abdel Nasser. As the international political situation developed after the war, Nasser became increasingly convinced that Israel would not accept the political settlement endorsed by United Nations Security Council Resolution 242 (and also endorsed by the two sides' patrons, the United States and the Soviet Union).[183] Nasser therefore concluded that the only way Egypt could persuade the Israelis to change their position would be through a military option.[184] Nasser neatly summarized this opinion in an interview that he gave in the Egyptian press:

> The first priority, the absolute priority in this battle is the military front, for we must realize that the enemy will not withdraw unless we force him to withdraw through fighting. Indeed, there can be no hope of any political solution unless the enemy realizes that we are capable of forcing him to withdraw through fighting.[185]

To accomplish this, Nasser devised a military policy consisting of three phases:

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[182] The War of Attrition is a little-researched and poorly understood portion of the Arab-Israeli conflict. Much of the literature about it that does exist is part of broader works on the Arab-Israeli conflict. See Yaacov Bar-Siman-Tov, *The Israeli-Egyptian War of Attrition, 1969-1970* (New York: Columbia University Press, 1980); Chaim Herzog, *The Arab-Israeli War: War and Peace in the Middle East From the War of Independence through Lebanon* (New York: Random House, 1982); Trevor N. Dupuy, *Elusive Victory: The Arab-Israeli Wars, 1947-1974* (New York: Harper & Row, 1978); Amnon Gurion, "Israeli Military Strategy Up to the Yom Kippur War," *Air University Review* 33, no. 6 (September-October 1982): 52-57; Avi Shlaim and Raymond Tanter, "Decision Process, Choice, and Consequences: Israel's Deep-Penetration Bombing in Egypt, 1970," *World Politics* 30, no. 4 (July 1978): 483-516; Lon Nordeen, *Fighters Over Israel* (New York: Orion Books, 1990); Eliezer Cohen, *Israel's Best Defense: The First Full Story of the Israeli Air Force,* trans. Jonathan Cordis (New York: Orion Books, 1993); Edward Luttwak and Dan Horowitz, *The Israeli Army* (New York: Harper & Row Publishers, 1975); Jerry R. Thornberry*, The Arab-Israeli Conflict: The War of Attrition and Preparations Preceding the October 1973 War* (master's thesis, U.S. Army Command and General Staff College, Fort Leavenworth, Kans: 1986).
[183] UNSCR 242 called for Israel to pull back to its pre-1967 borders in exchange for Arab recognition of the State of Israel, the establishment of a demilitarized zone between Israel and Arab countries, and discussion regarding the fate of Palestinian refugees. While both sides recognized the mandate, their differences lay in the timing: both sides wanted it to occur on their terms. Nasser and the other Arab leaders demanded that Israel withdraw from the occupied territories and then the Arabs would consider recognition. Naturally, Tel Aviv was against this.
[184] Bar-Siman-Tov, 44.
[185] Gamel Abdel Nasser, *Al-Ahram*, January 21, 1968, as cited in Bar-Siman-Tov, 44.

defensive rehabilitation, offensive defense, and the liberation phase.[186] The first phase, "defensive rehabilitation," lasted from July 1967 to September 1968. During this period, the Egyptians rearmed, with Soviet help, their goal being the ability to sustain a longer conflict with the Israelis. The Egyptians also acquired new weapons from the Soviet Union, accompanied by thousands of Soviet support personnel. While Soviet personnel were initially there to train the Egyptians on the new weapons, they soon became involved in all aspects of the Egyptian military. Finally, Nasser made numerous personnel changes among the Army's senior leadership.[187]

The "offensive defense" phase of the plan commenced on 8 September 1968 with a massive Egyptian artillery barrage against Israeli positions along the Suez Canal. Nasser had two objectives for this part of the plan. The first was to raise the morale of the Egyptian army and the country, hopefully erasing the psychological effect of the Six-Day War. The second objective was to cause attrition against the Israeli Army. Nasser believed that he could convince Tel Aviv to change its stand regarding negotiations by inflicting a large human and economic cost on the Israeli economy. To do this, Egypt planned to exploit its one area of superiority vis-à-vis the Israelis, artillery, and to supplement it with commando raids against Israeli targets.[188]

In contrast, Israeli aims were modest. Tel Aviv planned a defensive strategy with the goal of maintaining the territorial, political, and military *status quo* from the end of the Six-Day War. In the process, it hoped that to avoid escalation to another general war with the Egyptians.[189] The Israelis also wanted to limit the intensity of the conflict so as not to give the Soviets an excuse to intervene.[190] Adding to Israeli difficulties was the fact that a defensive strategy was something with which they were not familiar. Previously, a lack of depth had forced the Israelis to adopt offensive strategies that emphasized massive preemptive strikes to gain the upper hand against the larger Arab armies. With the capture of the Sinai Peninsula in the Six-Day War, Israel possessed strategic depth for the first time. This sparked a debate within the government about the best way best defend the territory. They had two choices: a mobile defense or a forward

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[186] Herzog, 212.
[187] Thornberry, 18; Herzog, 213-4.
[188] Herzog, 214, 224.
[189] Thornberry, 30-1.

defense. The mobile defense played into the IDF's long suit: the Israeli Air Force (IAF) and the Army's mobile armor formations. However, there were members of the government that feared Egypt might conduct a very limited operation to establish a bridgehead on the east bank of the Canal. Since the Israelis would then be forced to attack hastily prepared defenses that backed onto the Suez Canal, the effectiveness of Israeli armor would be diminished since it could not exploit breakthroughs in the line. This in turn would lessen the effectiveness of a mobile defense. In deference to this concern, Tel Aviv decided on the forward defense to ensure that Egypt did not establish that bridgehead.[191]

Moreover, the Israelis had to walk a fine strategic line. They had to be strong enough to defend their territory and protect their soldiers, but not so strong as to provoke Cairo. Conversely, Tel Aviv was nervous that Cairo might perceive its actions as being too weak, and escalate the situation to exploit the perceived weakness.[192]

During this on-again, off-again phase of the conflict, which lasted throughout the fall, Israel refrained from using the airpower against Egypt. Tel Aviv believed that since both sides wanted to keep the conflict at a low intensity level, use of the IAF would be seen as quite provocative and escalatory, not only militarily with the Egyptians, but also politically with the Americans and the Soviets. And since the IAF would not be very productive against the potential targets at the time, troops, guns, and mortar emplacements, Tel Aviv elected to show restraint by not using this powerful arm of the IDF.[193]

Egypt commenced the War of Attrition itself on 9 March 1969, the "liberation" phase of their operation.[194] As the conflict heated up in the spring and early summer of 1969, and as Israel suffered increased casualties from Egyptian artillery and commando raids, internal politics drove the Israeli government to shift from a defensive to a limited offensive strategy. This strategy change included the first use of the IAF against Egyptian targets near the Suez Canal since 1967, as well as larger commando raids

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[190] Shlaim and Tanter, 511.

[191] Dupuy, 358-361; Gurion, 54-55.

[192] Bar-Siman-Tov, 67-71.

[193] *Ibid.,* 74.

[194] For the Israelis, the War of Attrition also included significant anti-guerilla operations in east, conducted on against groups on Syrian, Lebanese, and Jordanian soil.

against countervalue targets deep in Egyptian territory. Initially, the Israelis used the IAF to prevent a perceived Egyptian crossing of the Suez Canal. The IAF's targets during this first phase of the air campaign (20 to 28 July 1969) were Egyptian air defense sites, artillery emplacements, and commando bases near the Canal. The Israelis then paused the bombing to gauge the Egyptian reaction, as well as the reaction of the international community.[195] The second phase, from 13 to 18 August, was retaliatory in nature. The IAF conducted strikes only after a heavy Egyptian artillery attack, and then it was used only against artillery positions. Once they determined that this retaliatory action was not effective, the Israelis shifted to a more aggressive posture. From September to December 1969, the IAF, in the role of "flying artillery," launched a series of intense strikes against Egyptian positions all along the Canal, with the aim of "wearing down the wearers down" to impose a cease-fire on the Egyptians.[196] In doing this, the IAF continued limiting its strikes to targets near the Canal; in the process, it inflicted significant damage on the Egyptian air defense system.[197]

At the end of December, the Israeli cabinet made the momentous decision to escalate the war. Since the Egyptian air defense system along the Canal was damaged, it was now possible for the IAF to strike deep into Egyptian territory with relative impunity.[198] Unfortunately, there was no clear consensus within the Israeli government regarding the objectives of these strikes. The cabinet eventually decided on three military objectives: reduce further Egyptian military pressure by bombing their supply and logistics facilities, deter Cairo from a full-scale war, and bring the War of Attrition to an end by compelling Egypt to accept a cease-fire. The Cabinet also had a number of political and/or psychological objectives for deep strikes, although there was not unanimous agreement about them: breaking the morale of the Egyptian people, creating a credibility gap between Nasser and the Egyptian people, and causing the downfall of

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[195] Bar-Siman-Tov, 89.
[196] *Ibid.,* 88-90.
[197] Dupuy, 363.
[198] The arrival of the F-4 Phantom aircraft from the United States in late 1969 made deep strikes feasible. For the IAF, the F-4 represented a quantum leap in capability. Described as the "revolution of the century" for the IAF, the F-4 could not only carry a larger bomb load much further than the A-4 Skyhawk, but its air-to-air capability meant that it did not need an escort. Bar-Siman-Tov, 120; Cohen, 286; Nordeen, 99.

the Nasser regime.[199] Not only were the deep strikes escalatory because of the depth of the targets, but their objective was also escalatory within the context of the larger Arab-Israeli conflict. This was the first time Israel attempted to end a conflict through the removal of an Arab leader instead of through the destruction of the Arab armies.[200]

In addition to making questionable decisions about the political objectives for the deep strikes,[201] Tel Aviv misjudged Soviet and American reactions to these strikes. The Cabinet believed that Washington would not oppose the strikes, since Israeli leadership saw Nasser's removal being consistent with the United States' regional interests. Moreover, the majority of the Israeli Cabinet believed that technological and political constraints would prevent Moscow from intervening on Egypt's behalf.[202] These miscalculations would cost the Israelis dearly in the end.

The IAF's deep strikes into Egypt began on 7 January 1970. In the next four months, the IAF would fly 3,300 sorties almost without loss, and drop over 8,000 tons of ordnance on Egyptian positions.[203] These strikes would go a long way towards fulfilling their military objectives: Israeli casualties along the Suez Canal dropped significantly and Cairo's ability to conduct a cross-canal operation decreased as the IAF slowly degraded Egyptian logistical capability.[204]

However, the deep strikes did little to achieve the Israeli political objectives. Far from breaking Egyptian morale, the people rallied around Nasser. But the IAF's success did present Nasser with a military problem that he could not solve. On 22 January 1970, Nasser flew to Moscow and asked the Soviet leadership to build an air defense system in the Egyptian interior—manned by Soviet troops. Moscow faced the dilemma of intervening, something that they did not want to do, or demonstrating to the world that Egypt and the Middle East were not that important to them. The resulting Soviet decision to help Nasser launched what became the greatest delivery of military hardware and

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[199] Shlaim and Tanter, 491-2.   Almost all Cabinet members later denied that the fall of Nasser's regime was an objective, but at least one official did assert that this was a prevalent idea in the Cabinet at the time.

[200] Bar-Siman-Tov, 121.

[201] Airpower has yet to cause the fall of a government.

[202] Shlaim and Tanter, 492-494. Although Israeli Prime Minister Golda Meir later denied that the Cabinet discussed possibility of Soviet intervention, Shlaim and Tanter assert that the Cabinet did consider this possibility. They conclude that the government's discussion of this issue was "cursory, uninformed, and speculative." Shlaim and Tanter, 495.

[203] Shlaim and Tanter, 496.

[204] Ibid., 498.

technology to a non-communist state up to that time.[205]

In addition to providing military support, the Soviets also began a diplomatic campaign in support of Egypt by pressuring the United States to restrain Israeli actions. President Nixon rebuffed the Soviet challenge and stated that the United States would match any arms escalation with the delivery of similar hardware to the Israelis.[206] Despite its reaction to the Soviets, however, the U.S. was concerned about the deteriorating situation. After discussions with the Israelis failed to persuade them to limit their attacks, Washington took the unprecedented step of linking future arms sales to political agreement between Tel Aviv and Washington on negotiations—effectively forcing the Israelis to bow to Washington's political concerns in order to receive future arms shipments.[207]

In addition to the Soviet supplied missiles and MiG-21 aircraft that began to arrive at Egyptian ports, the Israelis soon discovered that Soviet pilots were manning late-model MiG-21 aircraft that defended sites deep within Egypt. Since the IAF was unsure of Soviet intentions, the deep strikes continued. On 18 April 1970, after discovering that Soviet pilots flying Egyptian-marked aircraft were planning to intercept an IAF raid, the Israelis aborted the mission. Seeing that the Soviets now intended to contest control of the skies over the Egyptian interior, and since they wanted to avoid a direct military clash with the Soviet Union, Israel halted the IAF's deep strikes the next day. In the coming days, Tel Aviv signaled to the Soviets and the Egyptians that it did not want any engagement with Soviet forces, but it would resist any Egyptian or Russian attempts to extend the missile defense zone to the Suez Canal.[208]

Unfortunately for the Israelis, the Soviets either did not read the signal, misinterpreted it, or chose to ignore it. Undeterred and with the IAF now limited to operations near the Suez Canal, the Soviets and Egyptians pushed the air defense system to the Canal area in May and June 1970, reestablishing and reinforcing what had been degraded the previous year. The aggressive Soviet stance led to a series of Israeli-Soviet clashes in the air during June and July 1970. The IAF lost seven aircraft in this period,

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[205] *Ibid.,* 499.

[206] *Ibid.*, 500.

[207] *Ibid.,* 502.

[208] Bar-Siman-Tov*,* 151-4; Dupuy, 366; Shlaim and Tanter, 505.

but it did destroy five Soviet MiG-21s without a loss in an engagement on 30 July. It was after these losses, and under U.S. pressure, that Israel reluctantly accepted a cease-fire proposed by U.S. Secretary of State William P. Rogers; the cease-fire went into effect on 7 August 1970.

During the War of Attrition, over 400 Israeli troops were killed and another 1,100 wounded on the Egyptian front.[209] Beyond the human cost, Israel did not achieve the goal that it set for itself at the beginning of the War of Attrition, maintaining the *status quo*, in two respects. First, Tel Aviv was not able to maintain its overall strategic superiority vis-à-vis the Egyptians. Moscow and Cairo forced the Israelis to redirect their air efforts against the Egyptian interior. In addition, the Egyptians reestablished their air defense net as far east as the Suez Canal. This rejuvenated air defense system with the Soviet presence, coupled with Israel's reluctance to engage the Soviets, hampered future Israeli military strategy. It took away Israel's two most effective military strategies— reprisal by air attack and the massive preemptive strike that worked so well in the Six Day War. Moreover, the Soviet deployment of sophisticated air defenses to Egypt meant that the IAF lost the technological edge it had held over the Egyptian air defenses. Both of these would have a tremendous impact on the IDF during the Yom Kippur War in 1973. And perhaps most importantly, the Israelis lost politically because both the Soviet Union and the United States were now directly involved in the conflict, something that Tel Aviv had not wanted.[210]

Discussion

During the War of Attrition, both Israel and Egypt initially went to some lengths, and assumed risk, to ensure that the conflict did not escalate into another general war, something that neither side wanted. The Egyptians, still bloodied from the Six-Day War, limited their military options to simply taking advantage of the one area in which they had superiority over the Israelis, artillery. The Israelis wanted to bring the Arabs to the negotiating table on their terms. Short of that, they did not want to absorb the human and economic costs of another general war. Moreover, Israel wanted to keep the United

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[209] Dupuy, 369. Dupuy comments that while precise information regarding Egyptian losses is not available, Israeli claims of 15,000 Egyptians killed are at least three times too high.
[210] Dupuy, 369.

States and the Soviet Union out of the conflict. It was only after they saw that their initial attacks did not elicit a significant negative response that they believed that they could escalate their actions without risking superpower intervention. This miscalculation demonstrates two important points. The Israelis misread not only the Egyptian reaction to the provocation of their deep strikes, they also confused a lack of American and Soviet response to their previous actions as tacit permission to escalate their actions. Tel Aviv did not have an adequate understanding of their adversary and the other major players. Moreover, despite their best efforts, the Israelis were unable to control the situation. While it was their decision to escalate the conflict with the initiation of deep strikes, they could not control Egyptian and Soviet reaction to their move. This illustrates one of the critiques against those who try to impose rationality on warfare. A danger inherent to war on paper is that it can be one-sided; in reality, the adversary does get a vote and he often chooses the course that one does not expect.

Both Israel and Egypt wanted to limit the intensity of the conflict, yet they both targeted what they believed the other side valued to compel them to accede to their demands. The Egyptians believed that the Israelis wanted to avoid heavy human and economic costs to defend the east bank of the Suez Canal—this was their primary motivation for using artillery against Israeli forces near the Canal. This backfired when the Israelis built fortifications along the Canal (Bar-Lev Line) to protect their forces and to provide information about Egyptian actions. For their part, the Israelis attacked Egyptian economic and civil targets to compel Cairo to stop its attacks along the Canal. They initially used commando teams for these deep attacks; they later used the IAF. However, this too backfired when the IAF's deep attacks forced Nasser to bring the Soviets directly into the situation. There is a lesson to be learned from this. Both sides launched what they believed to be restrained attacks against the other, but they attacked assets that the other valued in an attempt to compel. Instead of recognizing their adversary's restraint, both sides saw the attacks against targets that they valued as provocations. These perceived provocations compelled both sides to escalate their own responses. It is all a question of perceptions: what to one side is a measured, retaliatory action is to the other a provocation.

Finally, Israel attempted to use airpower as a means of signaling or of tacit communication to the Egyptians. Tel Aviv did not use the IAF initially because it recognized that it would be too great an escalatory measure; its non-use was a signal of Israeli restraint and desire to limit the conflict. When the IAF was first used, Tel Aviv hoped that Cairo would recognize Israeli restraint through the limiting of IAF operations to the Canal area. Similarly, after Israel halted the IAF's deep attacks into Egypt and restricted operations to near the Canal in April 1970, Israel hoped Cairo and Moscow would recognize its desire to avoid conflict with the Soviet Union, but that it would defend the Canal if necessary. In neither case did the signal work. Finally, the Israeli decision to authorize the IAF to conduct deep strikes into Egypt was a restrained escalation in Israeli minds, it communicated an unintended message to Egyptian President Nasser. Facing a problem for which he did not have a solution, Nasser quickly went to Moscow to seek help, much to the overall detriment of the Israeli position. In all these cases, Israel attempted to send a tacit or subtle message through the use, or non-use, of airpower. The Egyptians and Soviets either did not receive the messages, misinterpreted them, or chose to ignore them.

Operation Deny Flight/Deliberate Force

NATO involvement in the skies over the former Yugoslavia, Operation Deny Flight, lasted from October 1992 to the fall of 1995. The last part of this campaign, Operation Deliberate Force, was the bombing of Serb targets within Bosnia to compel the Bosnian Serbs to respect UN mandates to leave the UN-designated safe areas alone. If Deliberate Force is considered an integral part of Deny Flight, then it is possible to view Deny Flight, in its entirety, as a graduated campaign.[211]

NATO air operations over Bosnia began in October 1992 as Operation Sky Watch, with the objective of monitoring air traffic over Bosnia that was supporting the various factions' military operations—these flights had been banned by the United

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[211] Historical evidence supports this assertion. NATO planners prepared for just such a contingency during the two years prior to the beginning of Deliberate Force. So while it was a significant political step to start bombing Bosnian Serb positions, NATO considered Deliberate Force to be just a continuation of Deny Flight. See Karl Mueller, "The Demise of Yugoslavia and the Destruction of Bosnia: Strategic Causes, Effects, and Responses," in *Deliberate Force: A Case Study in Effective Air Campaigning*, ed. Col Robert C. Owen (Maxwell AFB, Ala.: Air University Press, 2000), 25 (hereafter referred to as *Deliberate Force).*

Nations. The operation grew and acquired the name of Operation Deny Flight on 12 April 1993 in response to United Nations Security Council Resolution 816, which authorized NATO to intercept and shoot down any aircraft violating the no-fly zone. Deny Flight's scope increased again on 22 July 1993, when the UN authorized NATO to fly close air support (CAS) missions to protect UN peacekeeping troops. One month later, the UN authorized NATO to plan non-CAS strikes with the hope of deterring, and if necessary retaliating against, attacks on UN peacekeepers.[212]

It would be some months before these operations would yield any substantive results. On 28 February 1994, four U.S. F-16 aircraft shot down four of six Yugoslavian Air Force Super Galeb aircraft attacking Bosnian government positions. Shortly thereafter on 12 March, NATO launched its first CAS strike; this did not result in any attacks, but this was not long in coming. On 10-11 April, NATO conducted its first CAS strikes against Bosnian Serb forces attacking the UN-designated safe area of Gorazde. In retaliation, the Bosnian Serbs took 150 lightly armed peacekeepers hostage as a deterrent to future NATO air attacks.[213]

While NATO was authorized to conduct attacks in Bosnia, these were actually few and far between. During the period when NATO was authorized to conduct CAS missions, only 63 aircraft actually dropped ordnance in nine separate incidents (two were part of the same attack). See Table 1. While there were only a relatively few instances of ordnance being dropped, there were many cases where UN peacekeepers on the ground requested CAS, but did not receive it. Why was this?

The central reason for this lack of NATO air activity was the "dual-key" approval process that was required before any kind of weapons discharge could occur. Analogous to an ICBM missile crew who must both consent to the release of nuclear weapons, the dual-key approval process ensured that representatives from both the United Nations and NATO approved the use of air strikes in a particular situation. There were two reasons for this. UN Secretary General

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[212] Mueller, 19-20.
[213] *Ibid.*, 21.

Table 1—NATO Air Strikes During Deny Flight[214]

DATE	LOCATION	TARGET	NUMBER OF AIRCRAFT	RESULTS
10 APR 1994	GORAZDE	SERB POSITIONS	2	UNKNOWN
11 APR 1994	GORAZDE	SERB POSITIONS	2	UNKNOWN
5 AUG 1994	VIC SARAJEVO	VEHICLE	2	UNKNOWN
22 SEP 1994	VIC SARAJEVO	VEHICLE	2	UNKNOWN
21 NOV 94	UDBINA	AIRFIELD	39	RUNWAY SHUT DOWN
21 NOV 94	OTOKA/DVOR	SAM	2	SAM RADAR NEUTRALIZED
23 NOV 94	OTOKA	SAM	2	SAM RADAR NEUTRALIZED
25 MAY 95	PALE	AMMO DUMP	EST. 5	HEAVY DAMAGE
26 MAY 95	PALE	AMMO DUMP	EST. 5	HEAVY DAMAGE
11 JUL 95	SREBRENICA	SERB POSITIONS	2	UNKNOWN

Boutros Boutros-Ghali was reluctant to authorize strikes under UN auspices that might appear to be offensive to one side or the other because it would threaten the UN's appearance as a neutral player in the situation. Second, the Secretary General was concerned about the lightly armed UN peacekeepers deployed in Bosnia and their vulnerability to attack and capture by one of the warring factions in retaliation for air strikes.[215]

Because of this, Boutros-Ghali initially retained the right to authorize any strike mission in Bosnia. However, since the Secretary General was often difficult to get hold of in these time-sensitive situations, the authorization to use CAS aircraft often came too late. Boutros-Ghali later delegated the authority for CAS mission to his representative in the region, Mr. Yasushi Akashi, who was stationed in Zagreb, Croatia; Boutros-Ghali retained the authority for launching retaliatory missions.

The dual-key authorization process resulted in the ineffective use of airpower throughout Operation Deny Flight. The few actual uses of airpower, mere pinpricks, had little effect on the Bosnian Serb leadership who continued their actions against the UN safe areas.

Fortunately, the political-military situation in the region began to change in 1995, establishing the conditions for the effective use of airpower. In May 1995, after NATO discovered that the Bosnian Serbs had returned heavy weapons to the vicinity of the

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[214] Kurt F. Miller, *Deny Flight and Deliberate Force: An Effective Use of Airpower?* (master's thesis, U.S. Command and General Staff College, Fort Leavenworth, Kans: 1997), 48.

[215] *Ibid*., 56

Sarajevo safe area, and would not remove them when challenged, the UN authorized NATO to carry out a punitive retaliatory strike. NATO did this by twice attacking an ammunition storage depot near Pale, the Bosnian Serb capital, on 25 and 26 May 1995. In response, the Bosnian Serbs took 370 UN peacekeeping troops hostage and used them as human shields, which deterred further NATO attacks. Perhaps inspired by their perception that NATO and the UN were impotent to stop them, the Bosnian Serbs captured the safe-area of Srebrenica in July, expelling the Muslim population of the city, with the exception of seven thousand men who were presumably killed. The Bosnian Serbs then overran the UN safe area at Zepa. These brazen attacks, coupled with having UN peacekeepers used as human shields and the subsequent threats to other safe areas in Bosnia, finally forced NATO to act.[216]

At the London Conference on 21 July 1995, the foreign ministers of the sixteen intervening states took the enormous step of agreeing that NATO would commence large-scale air strikes against the Bosnian Serb Army if it either attacked Gorazde or massed weapons in preparation for such an attack. A few days later, the North Atlantic Council (NAC), NATO's highest political body, authorized NATO to conduct air strikes if the Bosnian Serbs threatened any of the other three safe areas.[217]

What NATO did not publicize is that the NAC also approved a number of other measures. The first was a list of trigger events that, if they occurred, would start the bombing. This decision predetermined exactly what would instigate a NATO strike and in doing so would allow for a near instantaneous military response. NATO's Supreme Allied Commander, General George Joulwan, later noted that he "tried to get political clearance so we could instantly respond. You did not want to wait until the train wreck to occur before acting. *You need will at the political level* to give responsiveness to commanders on the ground."[218]

The NAC's second unpublicized decision was to approve the overarching plan for air strikes in Bosnia, proposed by Lt Gen Michael Ryan, NATO's Allied Air Forces commander in the Southern Region. Ryan's plan consisted of two parts. First, the plan

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[216] Mueller, 23-4.
[217] *Ibid.,* 25-6.

divided Bosnian Serb territory into two zones of action (ZOA). These were ZOA Northwest, which included Banja Luka and the Bihac safe area, and ZOA Southeast, which contained Pale and the safe areas of Sarajevo and Gorazde. The two ZOAs overlapped in the northeast corner of Bosnia; this region contained the Tuzla safe area. Ryan requested authority to attack targets throughout a ZOA if the Bosnian Serbs threatened or attacked a safe area in that ZOA. Second, Ryan submitted a proposal categorizing Bosnian Serb targets. Option One targets were those that directly threatened a safe area. Option Two targets were those that indirectly threatened the safe areas, i.e. those targets that had the potential to threaten a safe area. Option Three called for wide-ranging strikes against Bosnian Serb infrastructure. The NAC approved the ZOA attack plan as well as authorizing strikes against Option One and Two targets in the event that one of the trigger events occurred.[219]

Finally, the NAC granted Ryan "single-key" authorization to attack any part of the Bosnian Serb integrated air defenses. This meant that in the event of a trigger leading to air strikes, Ryan could attack any Bosnian Serb air defense site regardless of whether it was in the same ZOA where the provocation occurred. This authorization also meant that he could take this action without receiving further authorization from the UN.[220]

With these decisions, NATO took the unprecedented step of authorizing UN and NATO military commanders to launch air strikes against the Bosnian Serbs once a trigger event occurred, without the need for further political consultation. The politicians also gave the NATO commanders a wide operational latitude to conduct the war, as long as they stayed within their tightly defined political guidance.[221]

Of equal, if not greater, importance than these NATO decisions was UN Secretary General Boutros-Ghali's decision to delegate the UN key in the dual-key authorization process to his senior military commander in the region, Lt Gen Bernard Janvier, the head of the United Nations Peace Forces located in Zagreb. There were two reasons for this. Boutros-Ghali recognized NATO's newfound political cohesion and believed that

[218] George Joulwan, as cited in Tim Ripley, *Operation Deliberate Force: The UN and NATO Campaign in Bosnia 1995* (Lancaster, U.K.: Center for Defence and International Security Studies, 1999), 161. Emphasis added.
[219] Robert C. Owen, "Summary," in *Deliberate Force*, 480.
[220] Ripley, 166-7.
[221] Ripley, 165.

member states now had the political will to see through any air strikes against the Bosnian Serbs despite domestic political concerns.[222]   Boutros-Ghali probably also recognized that the UN mission in Bosnia and NATO operations in Deny Flight were simply not providing the necessary deterrent to protect the safe areas.

NATO did not have long to wait for a trigger event to occur. On 28 August 1995, a mortar attack on a market in Sarajevo killed 38 civilians. Once the UN determined that the Bosnian Serbs were responsible for this attack, Lt General Rupert Smith, Commander of the UN Protection Force in Bosnia (UNPROFOR) turned the UN key, authorizing air strikes.[223]   On the night of 30 August, NATO aircraft commenced Operation Deliberate Force.

While a detailed narrative of the execution of Deliberate Force is beyond the scope of this chapter, one can list some highlights;[224] see Table 2 for a thumbnail statistical sketch of the operation.

Table 2—Operation Deliberate Force Statistics[225]

Duration	16 Days (which includes a four day pause)
Total Sorties	3515
CAS/Airstrike/SEAD/Recce Sorties	2470
Munitions Employed	1026
Precision-Guided Munitions (PGMs)	708
PGMs as a Percentage of Total Munitions	69%
Results	76% of targets sustained moderate to heavy damage
Aircraft losses	1

Deliberate Force began with air and artillery attacks on the BSA positions in and around Sarajevo, as well as the related air defenses. This made sense given that the event that triggered the air strikes was an attack against the Sarajevo safe area. After two days of strikes, General Janvier ordered a 24-hour pause in the bombing to begin in the early morning of 1 September. The pause's purpose was to allow Janvier to meet with the

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[222] Owen, 481.

[223] General Smith was delegated the UN key whenever General Janvier was unavailable. General Janvier was attending his son's wedding at the time of this decision--he returned to Zagreb immediately after the beginning of the operation.

[224] See Mark J. Conversino, "Executing Deliberate Force, 30 August-14 September 1995," in *Deliberate Force*, 131-175.

[225] Miller, 49.

BSA commander General Ratko Mladic. Janvier first extended the delay to accommodate further diplomatic discussions and then to allow the Bosnian Serbs to withdraw their heavy weapons from around Sarajevo. It was only after the UN determined that the BSA was not pulling their heavy weapons out that NATO resumed its strikes on 5 September.

With the renewal of the air operation, NATO's and the UN's emphasis changed to trying to inflict pain on the Bosnian Serbs, but not necessarily trying to kill them. In this phase, NATO aircraft attacked communications nodes, bridges and roads with the objective of hindering the movement of Bosnian Serb ground forces. NATO also attacked BSA supply depots and ammunition dumps.[226] These Option Two targets made sense given NATO's assessment that the BSA's strength lay in its ability to move forces along these lines of communication (LOC) to whatever point in the country that they were most needed. Shutting down these LOCs would hinder the BSA's ability to do just that.

On 8 September, Bosnian Government and Croatian forces launched a large-scale offensive against BSA forces in western Bosnia. This event was not directly linked to the air attacks, but it would have an important compellent effect on the Bosnian Serbs. There is no evidence to suggest that there was any kind of collusion or cooperation between NATO on the one hand and Sarajevo and Zagreb on the other regarding the timing of this ground attack. That said, synergy did result from the two attacks, even if it was unintentional.[227]

Starting on 9 September, NATO aircraft began concentrated attacks against the BSA air defenses in the Northwestern ZOA. While the Bosnian Serbs had not threatened the safe area in Bihac, General Ryan could still conduct these strikes since he possessed "single-key" authorization to strike BSA air defenses anywhere in Bosnia. Two interesting events occurred on 10 September. The first was that NATO attacked BSA communications sites within the Northwest ZOA. These attacks not only degraded the air defenses in the area, they also had devastating effect on the Bosnian Serb defense against the Bosnian Government and Croatian offensive. Without their normal means of

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[226] Ripley, 268.
[227] *Ibid.,* 279-91.

communication, BSA commanders were unable to coordinate their defense. As a result, their defense against the ground offensive began to crumble.[228]

The second event of note was NATO's first use of cruise missiles in the campaign. Since the Northwestern ZOA was heavily defended and dangerous for manned aircraft, it made military sense to use the Navy's Tomahawk Land Attack Missile (TLAM) to strike some of these important air defense targets. An unplanned effect, however, was that the Bosnian Serbs perceived NATO's use of these missiles as a significant escalation and it resulted in a serious psychological impact on the Bosnian Serb leadership.[229]

Finally, early in the morning of 14 September, U.S. Assistant Secretary of State Richard Holbrooke, leading the diplomatic effort to bring all parties in the conflict to the negotiating table, informed General Janvier that the Bosnian Serb leadership had agreed to all the UN's and NATO's demands. The bombing pause that went into effect to allow the Bosnian Serbs to implement their part of the agreement became a cease-fire on 20 September.

Discussion

A number of observations about Deliberate Force are relevant to this discussion of gradualism. For General Ryan, since the NAC had approved his target lists prior to the beginning of hostilities and since he was given wide latitude on how to conduct the campaign, he was able to execute it in an effective manner, yet remain within the strategic constraints imposed on the campaign. In this strategically constrained environment, airpower produced tactically intense effects that helped compel the Bosnian Serbs to accept the UN mandates to leave the UN safe areas alone. It also demonstrated that the military could successfully execute a politically risky operation within the imposed constraints without high-level, day-to-day control of the operation by political decision-makers, as long as those decision makers had the *will* to give the commanders that control.

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[228] *Ibid.,* 286-7. Not only were the regional commanders unable to communicate with each other, the attack's effects prevented General Mladic from communicating with these commanders.
[229] Adm Leighton Smith, "Further Comments on 2nd Draft of BACS," fax transmission, 2 August 1997, as cited in Owen, 492.

The early days of Deny Flight provide a useful comparison of the command and control of airpower. The dual-key authorization process for the use of airpower in Bosnia was so cumbersome and unwieldy that it negated one of airpower's most useful characteristics: responsiveness.[230] In most cases, by the time the UN authorized CAS attacks to support beleaguered UN peacekeepers, the window of opportunity for using CAS had passed. In this case, the command and control procedures for airpower prevented its effective use. In turn, this unintentionally reinforced to the Bosnian Serbs that NATO was not serious enough politically to carry out such a mission.

The coordination, or lack thereof, between the military and diplomatic efforts during Deliberate Force is a second observation . The NAC's immediate objective for Deliberate Force was simply to compel the Bosnian Serbs to accept the UN mandates regarding the safe areas. There was no consensus within NATO to try to bomb the Serbs into submission. But the bombing did provide a compellent element to support the diplomatic effort that was trying to force the Serbs to agree to a negotiated settlement. Leading this venture was Holbrooke, who was representing the United Nations through the Contact Group,[231] as well as working directly to achieve the United States-sponsored peace plan. For various reasons, Holbrooke and General Ryan did not speak or communicate with each other in any manner during the operation. Since Holbrooke was not in Ryan's NATO chain of command, any contact would have been highly improper. More importantly, both NATO and the UN wanted to avoid the Serbs gaining the perception that Deliberate Force was supporting Holbrooke's diplomatic effort. The military and diplomatic tracks were ostensibly separate efforts. NATO was bombing the Bosnian Serbs to compel them to respect the UN mandates regarding the safe areas in Bosnia. Holbrooke was trying to bring all the parties in the conflict together to resolve their differences through negotiations. If the Bosnian Serbs received credible evidence that the air operation was directly supporting Holbrooke, then they would have called into question Holbrooke's position as an honest broker in the peace process. As a result, any

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[230] AVM Tony Mason, *Air Power: A Centennial Appraisal* (London: Brassey's 1994), 177. Mason cites responsiveness and speed as airpower's two most important characteristics that the dual-key authorization process negated. However, this author does not see any significant difference between the two in this instance.
[231] The Contact Group, consisting of the U.S., Britain, France, Germany, and Russia, was formed in 1994 to head up the effort to achieve a negotiated settlement of the conflict.

visible signs of communication between Holbrooke and Ryan would have gone a long way to foster this perception in the minds of the Bosnian Serbs.[232] Despite this lack of communication, Holbrooke was able to use the compellent aspects of the air campaign, the damage to the Bosnian Serb Army and its facilities, to tighten the screws on the Bosnian Serb leadership.[233] What is significant here regarding gradualism is that the diplomatic and military efforts were not closely coordinated. Yet the air operation was able to provide a strong compellent influence in conjunction with the diplomatic effort on the decision calculus of the Bosnian Serb leadership.

Air supremacy significantly aided NATO's efforts in compelling the Bosnian Serbs.[234] It is important to note two aspects of how this came about. NATO's political decision making body, the NAC, authorized Gen Ryan to strike anything related to the Bosnian Serb air defenses once a trigger event occurred. This allowed NATO airpower to neutralize the air defense threat in the most effective manner consistent with the maximum safety of the aircrews. Once NATO established air supremacy, airpower was then able to operate with relative impunity over Bosnia and impose the psychological effect of its presence on the Bosnian Serb leadership, along with fostering their feelings of impotence to stop it. A senior U.S. diplomat captured its effect on BSA commander Mladic by noting that he looked "like he'd been through a bombing campaign."[235]

Deliberate Force reflected the continuing evolution in the way the U.S. Air Force achieves control of the air. Operation Desert Storm saw the first significant use of stealth aircraft and precision-guided munitions (PGMs) in the air superiority fight against a sophisticated Soviet-style air defense. This trend continued in Deliberate Force. While U.S. stealth aircraft did not participate in Deliberate Force, NATO did use large numbers of aircraft-delivered PGMs and a small number of cruise missiles. PGMs allowed the

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[232] Owen, 500-1.

[233] *Ibid.*, 495. This lack of communication did have an effect on how Holbrooke and Ryan conducted their various portions of the campaign. Ryan, concerned that the politicians would end Deliberate Force before he could achieve the military objectives, sought to strike targets as quickly as possible, even at the risk of running out of targets. Conversely, Holbrooke was worried that NATO would run out of targets before he could bring the Bosnian Serbs to the negotiating table. As a result, Holbrooke pushed both Milosevic and the Bosnian Serbs to come to terms before the targets ran out. Owen, 502-5. Since Holbrooke was successful in bringing all sides to Dayton, the discussion is academic, but it does illustrate the importance of communication between the diplomatic and military communities.

[234] Lt Col Richard L. Sargent, "Aircraft Used in Deliberate Force," in *Deliberate Force,* 207.

[235] Ambassador Christopher Hill, as cited in Owen, 498.

aircrews to attack Bosnian Serb air defenses from a much greater standoff range, increasing their survivability, while cruise missiles struck targets without putting aircrews in danger at all. This ability to inflict damage on the adversary without suffering the losses of past conflicts in all likelihood contributed to any impotence felt by the Bosnian Serb leadership, which in turn produced a compellent effect on their decision making.

Finally, as Deliberate Force began, the Bosnian Serbs were cut off from their diplomatic and economic sources of support. During the previous year, Serbian President Milosevic broke ties with the Bosnian Serbs and closed their common border.[236] While some leakage did occur along the border, the fact that the Bosnian Serb's most important patron was no longer supporting them would have produced a significant compellent influence on the Bosnian Serb leadership.

But this was not the only way the Bosnian Serbs were isolated. Pale received significant military and moral support from the other Serb peoples in the region, mostly from Croatian Serbs who had "liberated" regions of Croatia. But earlier in 1995, Zagreb successfully reconquered most of these Serb enclaves and restored Croatian rule over them. Moreover, the loss of Bosnian Serb held territory to the Bosnian Government-Croat offensive that coincided with the air operation also removed a source of support for the leadership. Between the loss of support from Belgrade and the other ethnic Serbs in the region, the Bosnian Serb leadership must have felt very alone during Deliberate Force.

Comparing the War of Attrition and Deny Flight/Deliberate Force

Neither the War of Attrition nor Deny Flight/Deliberate Force represents a deliberately graduated campaign—none of the players involved intended the campaigns to escalate gradually. Yet, both campaigns exhibit many of the characteristics of gradualism, as one would expect from the theory's propositions. Both NATO and Israel desired restrained campaigns, and the differences in the reasons are highly illustrative. Israel wanted to ensure that Egypt's superpower patron did not begin direct participation in the conflict. On the other hand, NATO needed to keep their operation constrained to

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[236] Mueller, 22. Serbia had been suffering the effects of UN-imposed economic sanctions for two years for their support of the Bosnian Serbs. It was the pressure of the sanctions and his desire to have them lifted that persuaded Serbian President Milosevic to break ties with the Bosnian Serbs. The UN eased some of the sanctions a short time after Belgrade broke ties with Pale.

ensure that the alliance maintained its political cohesion. NATO was more successful at restraining the conflict than Israel—the preapproval of targets for NATO air strikes allowed General Ryan to prosecute Deliberate Force using airpower effectively within the constrained environment. Israeli political miscalculation led to their decision to change their policy about escalation, which resulted in their deep strikes and the subsequent Soviet intervention.

Israel and NATO both attempted to use airpower as a means of communication with the adversary. Israeli communication with Cairo either was not received or was ignored. Likewise, NATO's use of airpower to signal the Bosnian Serbs in the early years of Deny Flight was also not received or, more likely, ignored. It was only after this failure was reversed and airpower was used in a manner better suited to its nature, as a heavy, blunt instrument, that NATO was able to compel the Bosnian Serbs to agree to observe the UN mandates.

Both NATO and Israel believed they had extensive and intensive knowledge of their adversary. They both used airpower to threaten what they believed their opponents valued in an attempt to compel the adversary (Egyptian economic targets for Israel, Bosnian Serb fear of domination for NATO). While it seems that NATO had a better understanding about its adversary, it is debatable how well the Israelis understood theirs, given their miscalculation regarding Nasser's, Moscow's, and Washington's various reactions to the IAF's deep attacks. Finally, it is interesting that control and coordination of the military and diplomatic efforts did not occur at the highest levels in either case. Israel did not have a significant diplomatic effort working in conjunction with its military operations. For NATO and the UN, Holbrooke's diplomatic thrusts were not coordinated with Ryan's air operations; but despite this, Holbrooke was still able to make the most of the air operation's compellent effects.

Challenges to Conventional Wisdom

The most important challenge to the conventional wisdom regarding gradualism resulting from an analysis of Deny Flight/Deliberate Force is that a graduated use of military power can produce the desired political effect. This completely contradicts the claims of critics following Operation Rolling Thunder that gradualism cannot work as a strategic concept.

The evidence of Deliberate Force also challenges the theoretical propositions of gradualism, specifically the importance of the centralized control of the compellent campaign. As noted in the previous chapter, one must examine two facets implicit in this proposition: the central control of airpower and the need for coordination between the military and diplomatic efforts. Deliberate Force demonstrated that it is not necessary for the political decision makers to control the day-to-day details of the air operation. The NAC's preapproval of military strikes if a trigger event occurred demonstrated the tremendous trust that they placed in NATO's military commanders to conduct the operation within the prescribed constraints. Two factors contributed to this trust. The first is that the survival of NATO member states was not in jeopardy if Deliberate Force failed. Granted, if Deliberate Force had failed, the alliance would have suffered a tremendous blow to its credibility and it is conceivable that it might have been weakened or even collapsed as a result. But these states would still have existed. The second contributing factor to this trust is the increased political savvy of American senior military officers. In the manner of Colin Powell, the archetype political general, Adm Smith and Gen Ryan both realized the importance of the political constraints and dangers that the military operation posed to the alliance; they took the appropriate actions to minimize the risk to NATO's political cohesion.

Deliberate Force also demonstrated that, contrary to gradualism's theoretical propositions, that close coordination between the military and diplomatic efforts is not a necessary condition for success in a graduated campaign. Despite this, the evidence does suggest that coordination between the two efforts would have enhanced the effectiveness of both.

Conclusion

The War of Attrition and Deliberate Force yield insights into the best way to conduct a graduated air campaign, as well as significant challenges to the conventional wisdom regarding the graduated use of airpower and the theory of gradualism. NATO quickly gained air supremacy over the Bosnian Serbs in Deliberate Force. In all likelihood, this enabled NATO to impose on their adversaries the additional compellent effect of impotence in the face of airpower; this in turn suggests a practical way to help achieve a greater compellent effect through the military instrument for which the theory does not account. The story for Israel is different. The Israelis were able to establish air superiority over Egypt. However, it was Nasser's reaction to this air superiority, a problem that he could not solve by himself, that led him to turn to the Soviets for assistance. Once the Soviets became engaged in the conflict, Tel Aviv ceded control of the air on the western side of the Suez Canal to avoid conflict with the Soviets— effectively losing air superiority. Finally, in Deliberate Force, NATO demonstrated that airpower can operate successfully in a politically risky, constrained environment. NATO's political decision-makers provided military commanders with broad political constraints within which they had to operate. Within these constraints, however, the NAC granted the military considerable operational freedom to conduct the air operation using airpower to its fullest effect. Part of this included their preapproving target sets and authorizing strikes against any part of the Bosnian Serb air defense system.

Both the War of Attrition and Deny Flight/Deliberate Force are a rich source of evidence for reassessing gradualism as a strategic concept. It is to this analysis that this paper turns to next.

CRITICAL ANALYSIS

Introduction

The importance of testing theory against empirical evidence cannot be overestimated. Seeing how well a theory translates into reality, identifying where it fails to translate accurately, and the subsequent refining of the theory are all key facets of the art of critical analysis.[237]

The purpose of this chapter is to analyze the criticism of gradualism in light of the new evidence from Chapter Six's two case studies. The goal here is either to validate the criticisms from Rolling Thunder, or to suggest that the criticism may not actually hold in light of the new historical evidence. To do this, there will first be comparison of the three graduated campaigns, Rolling Thunder, the War of Attrition, and Operation Deny Flight/Deliberate Force, from which a number of lessons will be drawn. The chapter concludes with an examination of the implications of the historical evidence for the theory of gradualism and its propositions.

The Lessons of Gradualism

There are many striking similarities between the use of airpower by the United States in Rolling Thunder and the Israelis in the War of Attrition. Conversely, there are many interesting contrasts between the execution of Rolling Thunder and the War of Attrition on the one hand, and NATO's execution of Deny Flight/Deliberate Force on the other. An analysis of these similarities and contrasts may yield important insights into not only the graduated use of airpower, but in some cases, general compellence.

Strategic Context

All three campaigns demonstrate the impact that the strategic context can have on a compellent campaign.

Superpower Patronage

The most fundamental similarity between Rolling Thunder and the War of Attrition is that both campaigns occurred within the context of the Cold War; an important contrast between these first two campaigns and Deliberate Force is that the

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[237] See Clausewitz's views on this subject in "Critical Analysis," in *On War,* ed. and trans. Michael Howard and Peter Paret (Princeton, N.J.: Princeton University Press, 1976), 156-169.

latter occurred after the end of the Cold War. The United States and Israel were both engaged with nations that had the Soviet Union, in the case of Egypt, and the Soviet Union and China, in the case of North Vietnam, as patrons. Neither Washington nor Tel Aviv wanted these patrons to intervene in the conflict. As a result, they conducted restrained operations to ensure that they did not provoke the feared intervention.

These restraints produced two significant results. As shown in Chapter Five, Johnson administration fears of Soviet and Chinese intervention contributed to airpower's lack of effectiveness. Military commanders were not authorized to suppress North Vietnamese air defenses while they were relatively benign and easy to strike. This contributed to the American failure to gain air supremacy and the resulting inability to impose airpower's compellent psychological effects on the North Vietnamese. Moreover, concern about Chinese intervention drove the Johnson administration to control the air operation from Washington. Believing that they could send subtle messages to Hanoi, Johnson's civilian advisor's hoped to persuade the North Vietnamese leadership of the threat to their industry by slowly increasing the intensity of the air attacks against their country. But they were unable to translate this concept into reality and, as a result, sent a muddled message to Hanoi.

NATO faced a dramatically different strategic context during Operation Deny Flight/Deliberate Force in the 1990s. The demise of the Soviet Union brought an end to the Cold War and the East-West competition. While the Russian Federation was still a powerful force that needed to be accounted for in political decisions, the overtones of superpower competition and the threat of Soviet military intervention was no longer a debilitating concern. In addition to their ethnic Slavic connection to the Russians, the Bosnian Serbs also had a regional patron in Serbian President Milosevic who, as perhaps the strongest regional political figure, provided significant political and military support to the Bosnian Serbs.

Because of the patronage that Hanoi and Cairo received, these states could adopt a more intransigent attitude toward the explicit and implicit demands of the compelling states. Not only is this true within the context of the Cold War, but this assertion also

holds in other recent compellence situations.[238] An examination of the rational decision making equation, developed in Chapter Four, provides insight into why this is the case. The equation

$$Costs_N - Benefits_N > Costs_C - Benefits_C$$

suggests that that a patron can influence the two variables on the non-compliance side. A patron can decrease a nation's costs of non-compliance by replacing items and capabilities that airpower has destroyed. An example of this was the Soviet Union's refurbishment of the Egyptian military during and after the War of Attrition. A patron can also increase the benefits of non-compliance by providing moral and political support to the nation under attack.

While the Bosnian Serbs had a powerful regional patron in Milosevic, the West had successfully compelled him, through the promise of eased economic sanctions, to cut ties with the Bosnian Serbs. Milosevic became an important player in establishing a cease-fire and the negotiation of the eventual Dayton Accords. A second example suggesting the link between compellent success and the isolation of the compelled state is provided by North Vietnam during Linebacker II in December 1972. The fact that the Soviet Union and China no longer backed Hanoi as strongly as they did during Operation Rolling Thunder allowed the United States to conduct an air campaign at a much greater level of intensity than it could during Rolling Thunder. Also contributing to this success were the United States' objectives for Linebacker II, which were very limited. Still, the knowledge that their patrons were not going to assist them, either militarily or diplomatically, must have been an important factor weighing on the minds of the North Vietnamese Politburo as they decided whether to bow to the United States' demands to return to the bargaining table.

A powerful patron has the potential to be a decisive factor in a graduated campaign by providing significant military, diplomatic, and moral support to a smaller state that is being compelled. This patronage may provide enough incentive to a

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[238] The importance of isolating a coerced state from its patron is illustrated by Korina Kagan, "The Failure of the Great Powers to Coerce Small States in the Balkans, 1875-1877 and 1914: Situational Versus Tactical Explanations," in *Strategic Coercion: Concepts and Cases,* ed. Lawrence Freedman (Oxford: Oxford University Press, 1999): 86-114. Kagan asserts that the major reason why great power coercion did not work in her two cases studies (Austria, Britain, and Russia versus Turkey in the 1870s and Austria-

compelled state's leaders that they become willing to resist the escalation of a graduated campaign, along with the resulting threat and destruction of what it values. This is particularly true in a graduated campaign since the compelling state will be increasing an adversary's cost of non-compliance relatively slowly. Not only will this diplomatic support bolster the leaders of the compelled state, making them more intransigent, but if the patron is strong enough militarily, it may also force the compelling state to conduct its diplomatic and military efforts in a less-than-optimal manner. The correlation between isolating a compelled state from its patron and the success of a compellent campaign strongly suggests that this is a necessary, but not sufficient condition for successful compellence. And even if it is not a necessary condition, then it is highly desirable to achieve it.

Post-Cold War Challenges

The end of the Cold War removed superpower patronage from the problems which NATO leadership had to resolve. However, the post-Cold War security environment created new problems with which NATO had to contend, the most important being NATO political cohesion. NATO was founded as an alliance to counter the perceived Soviet threat. If the Warsaw Pact had indeed invaded Western Europe, alliance political cohesion would not have been a concern. This changed after the Soviet Union's collapse. NATO could not take offensive action out of the area encompassed by its member states without the agreement of all its members. Britain, France, and other NATO members with troops deployed in Bosnia as UN peacekeepers were reluctant to approve significant NATO air strikes out of concern that the Bosnian Serbs would retaliate against these troops. And since alliance decision making requires consensus, the only way that decision makers could achieve consensus by authorizing only minimal retaliatory strikes in response to the worst Bosnian Serb provocations. Moreover, UN Secretary General Boutros-Ghali, recognizing the importance of NATO political cohesion for such military operations, ensured that any NATO military operation would be limited in nature and in scope by keeping strike authorization close hold through the dual-key arrangement. The combination of NATO-member concerns for troops on the

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Hungary against Serbia in 1914) is the fact that both Turkey and Serbia were backed by great power patrons, thus allowing them to be more intransigent in their negotiations with the coercing state.

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ground and the unwieldy command structure resulted in airpower being used minimally, and when it was used, it was used ineffectively.

This changed after the intervening states achieved consensus at the London Conference in July 1995, where they agreed on the need for air strikes to compel the Bosnian Serbs to observe UN mandates regarding the UN-designated safe areas. This newfound political will and cohesion manifested itself in the NAC's authorization to NATO military commanders to conduct strikes if a trigger event occurred. Boutros-Ghali recognized this cohesion, and gained confidence that NATO members would now see the air strikes through to the end despite any domestic political repercussions. As a result, he delegated authority for offensive air strikes down to his senior military commander in the region, Lt Gen Bernard Janvier. It was NATO's consensus on the need to take action no matter what the cost that enabled NATO countries to authorize the use of airpower in a manner that emphasized its strengths.[239]

Maintaining political cohesion throughout the operation was as important as achieving it. NATO military leaders realized this, particularly Lt Gen Michael Ryan, the commander of the Allied Air Forces in the Southern Region. Ryan understood the delicate nature of the alliance's political cohesion meant there would be little room for error in the air campaign. Recognizing that every bomb had the potential to cause a dramatic strategic effect, Ryan centralized the control of Deliberate Force to a much greater degree than was considered normal. This went so far as Ryan himself choosing the impact points for the ordnance, as well as delivery parameters for the strike aircraft. This degree of centralized control led some to charge that the campaign was being micromanaged like Rolling Thunder, but the sensitivities of the region and maintaining the alliance's political cohesion justified this level of control.[240] The campaign was tightly controlled, but by an experienced airman who was able to ensure the requirements of the political leadership were met while minimizing the impairment of airpower's effectiveness.

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[239] What helped was that the UN allowed NATO nations either to withdraw their peacekeeping troops prior to the beginning of Deliberate Force, like the British did with their troops in Gorazde, or to redeploy their forces to more defensible positions.

[240] See John C. Orndorff, "Aspects of Leading and Following: The Human Factors of Deliberate Force," in *Deliberate Force: A Case Study in Effective Air Campaigning* (Maxwell AFB, Ala.: Air University Press, 2000): 351-380. (hereafter referred to as *Deliberate Force*)

The importance of the strategic context in which any compellent campaign takes place should never be overlooked. The desire on the part of both Washington and Tel Aviv to avoid superpower intervention led them to constrain the intensity of the conflict. The Americans succeeded in doing this; the Israelis failed. In both cases, the restraints kept airpower from being used to its greatest effect. NATO was fortunate that the Cold War had ended when it started its air operations in Bosnia. A new set of problems replaced the old, however, providing new challenges to the effective use of airpower in a graduated operation, challenges that the centralized control of airpower was able to overcome.

Tacit Communication through Airpower

True to Schelling's ideals about compellence and gradualism, both the Americans and the Israelis tried to use airpower as a means of tacit communication and bargaining with their respective adversaries. As Chapter Five showed, the goal of Johnson's civilian advisors in the first few weeks of Rolling Thunder was to demonstrate to the North Vietnamese leadership the increasing threat posed to their industry by the gradually increasing intensity of the air attacks. It was their hope that Hanoi would recognize the threat to its warmaking capability and stop its assistance to the Viet Cong. In reality, Rolling Thunder's haphazard nature almost certainly conveyed a muddled message to the North.

The Israelis also used airpower, through its use and non-use, as a means of tacit communication not only with the Egyptians, but also with the Americans and the Soviets. As noted in Chapter Six, the Israeli desire to keep the Americans and Soviets out of the conflict compelled them to use airpower in non-optimal ways. The initial withholding of airpower from the conflict was a signal to the Egyptians that Tel Aviv was limiting the nature of the conflict. Even when it unleashed the IAF, Tel Aviv limited it to operating near the Canal Zone in another attempt to signal its intent to limit the war's intensity. And the Israelis hoped that their decision to pull back the IAF from deep strikes into Egypt to defending the Canal Zone would be read by the Egyptians and Soviets as an attempt to deescalate the conflict and that both sides could reach a *modus vivendi* about

the non-use of the Soviet military in the Canal Zone.[241] Unfortunately for the Israelis, not only did these attempts at tacit communication fail, but they also miscalculated the Egyptian and Soviet reaction. It was the lack of Soviet reaction to their slow expansion of the air war along the Canal in the Fall of 1969, along with their coincident attacks on the Egyptian air defense system, that contributed to the Israeli belief that they could commence strikes deep into Egypt without a Soviet response.[242]

The early part of NATO's Deny Flight and its conclusion with Deliberate Force provide a stark contrast in the use of airpower as a means of communication. For most of Deny Flight, like Rolling Thunder and the War of Attrition, airpower was used as a means of tacit communication between NATO and the UN on one side, and the Bosnian Serbs on the other. The graduated escalation of NATO air operations, from monitoring, to enforcing the no-fly zone, to defensive CAS missions, to offensive retaliatory strikes, attempted to signal the Bosnian Serbs the West's intent to enforce the approved UN mandates. Bosnian Serb actions continued anyway. The reason for the ineffectiveness of the signaling was the dual-key authorization process. Tactical airstrikes are time critical, and the time-consuming authorization process on the UN's part often negated the utility of making these airstrikes, either on the ground in the tactical situation of the moment, or in the minds of the Bosnian Serb leadership.

Much of this changed with Deliberate Force. Instead of being used in a subtle manner, airpower was used as a heavy, blunt instrument. The very act of launching a tactically intense campaign against elements of the Bosnian Serb Army (BSA) was a forceful message sent to Pale and Belgrade. The communication of any subtle messages was left to the leader of the diplomatic effort, U.S. Assistant Secretary of State Richard Holbrooke, who conveyed them through face-to-face negotiations with Serbian President Milosevic, and eventually with the Bosnian Serb leadership.[243]

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[241] Yaacov Bar-Siman-Tov, *The Israeli-Egyptian War of Attrition, 1969-1970* (New York: Columbia University Press, 1980), 154.

[242] *Ibid.,* 120-30.

[243] In reality, Holbrooke was far from subtle in his diplomatic stance with the Serbs. He practiced a *realpolitik* approach to achieving peace in the region, and he believed that the only way to force the Bosnian Serbs to the negotiating table was by threatening them with a military defeat. Tim Ripley, *Operation Deliberate Force: The UN and NATO Campaign in Bosnia 1995* (Lancaster, U.K.: Center for Defence and International Security Studies, 1999), 321.

Another facet affecting airpower's capability as a means of communication in the 1990s was that the U.S. Air Force was much better prepared in Deliberate Force to deal with the tactical and operational problem posed than it was for Rolling Thunder[244]. Having built its tactical force structure around the Army's AirLand Battle doctrine in the 1980s, and after having prepared and trained for years to defend against a Soviet invasion through the Fulda Gap, attacking a Soviet-style army and air defense system was something that the Air Force was manifestly prepared to do. And over Bosnia, it did it well.

Fortunately too for NATO, the BSA and its support facilities were targets tailor-made for airpower. In contrast to airpower's ineffectual use during earlier parts of Deny Flight, when it was used to signal with pinprick attacks, Deliberate Force's targets, chosen to produce the greatest compellent effect on the Bosnian Serbs, were vulnerable to air attack: fielded forces, targets direct and essential to military support, command, control, and communications (C^3), assets of the integrated air defense (IADS), and infrastructure.[245] The fact that the Bosnian Serb leadership folded so quickly illustrates airpower's effectiveness when it is used as a blunt instrument as opposed to a means of subtle or tacit communication.

Control of Airpower

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[244] The U.S. Air Force provided the preponderance of the forces to NATO for Operation Deliberate Force.

[245] Christopher M. Campbell, "The Deliberate Force Air Campaign Plan," in *Deliberate Force*, 107-109. Examples of actual targets within these broad categories include: fielded forces: heavy weapons; targets essential to military support: munitions and supply depots and storage facilities; C^3: radio relay stations, communication nodes, and some command facilities; IADS: early warning and SA sites; and infrastructure: transportation choke points, bridges, and tunnels.

Integral to maintaining NATO political cohesion was the ability to control airpower. As stated earlier, Gen Ryan's close control of Deliberate Force's air campaign led some to declare that the air war was micromanaged as it had been in Rolling Thunder. Yet Deliberate Force was successful. The differences between these two campaigns in this regard are intriguing. As noted in Chapter Five, Johnson and his advisors believed they had to control the application of military power in Vietnam to ensure that the situation did not spiral out control and risk the national survival of the United States. This need for control was based in part on their distrust of the military, who arguably could not have executed such a campaign anyway, plus the advisors' confidence in their own ability to control the use force.

This was different in Deliberate Force. Chapter Six demonstrated that the NAC mustered enormous political will and courage when it delegated to NATO's military commanders the authority to strike the Bosnian Serbs. And NATO's military commanders proved worthy of that trust by demonstrating the political savvy to recognize the importance of NATO political cohesion and take all the steps possible to mitigate the risks to it. Ryan, in deference to this political reality, went so far as to ignore one of airpower's key tenets: centralized control, decentralized execution.[246] Realizing that every bomb had the potential to cause a damaging political and strategic effect, he micromanaged the process to ensure this possibility was minimized. This political maturation of senior military officers, along with NATO member states' national survival not being threatened if Deliberate Force failed, are both important pieces of the strategic context that contributed to the overall success of Deliberate Force.

But Gen Ryan's close control of airpower in Deliberate Force also has implications for the use of airpower as a tool of communication. Not only can an air commander now wield airpower with relative dexterity, as demonstrated in Deliberate Force, but the technological improvements allowing the precision delivery of ordnance, suggest that airpower's ability to send a subtle message is improving. Ironically, while Gen Ryan's goal was not subtle communication through the use of airpower in Operation

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[246] This tenet states that airpower should be centrally controlled to ensure that it is used to its greatest effect, but that the details of the execution should be decentralized to the greatest extent possible to allow lower-level commanders the greatest flexibility to execute the mission. See Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine,* September 1997, 23.

Deliberate Force, his plan was very similar to the one envisioned by Johnson's advisors for the early weeks of Rolling Thunder. As was noted in Chapter Six, prior to the beginning of hostilities, the NAC authorized Ryan to do a number of things. First, the NAC approved Ryan's plan to attack Option One and Option Two targets and, if needed, Ryan could always seek authorization to attack Option Three targets, although this authorization would have been difficult to get. This gave him the ability to escalate the air campaign by increasing the sensitivity of the targets. Moreover, Ryan's plan for dividing Bosnia into two overlapping Zones of Action (ZOA), allowed for a graduated increase in the intensity of the air strikes through the changes in the geographical location of the targets. Ryan also had the authority to strike the air defenses in either ZOA at any time during the operation. By waiting until midway through the operation to launch concentrated attacks against Bosnian Serb air defenses in the Northwest ZOA, Ryan was able to geographically escalate the intensity of the attacks. Finally, Ryan was able to increase the intensity of the attacks by using what the Bosnian Serbs perceived to be an escalatory weapon, the Navy's Tomahawk Land Attack Missile (TLAM), which had a significant psychological impact on the Bosnian Serb leadership.[247] Ryan could thus vary the intensity of the attacks by geographical region, by the number of sorties, by target type, as well as by weapon type.

There are important differences between Rolling Thunder and Deliberate Force in this regard. In Rolling Thunder, the Johnson administration was trying to send a subtle message through airpower that was, at the time, a relatively heavy, blunt instrument. In Deliberate Force, NATO was sending a blunt message with a relatively precise instrument that could be wielded with some dexterity. While NATO was not trying to communicate a subtle message, the evidence suggests that it did have the capability to do so if this had been needed.

While the evidence suggests that airpower's precision and the dexterity of its control may have evolved to the point where it can be used to communicate subtle messages, one must remember that airpower still does have significant limitations. Weather will continue to limit airpower's effectiveness. Political constraints may prevent

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[247] Adm Leighton Smith, "Further Comments on 2nd Draft of BACS," fax transmission, 2 August 1997, as cited in Robert C. Owen, "Summary," in *Deliberate Force*, 492.

airpower from attacking certain targets. More importantly, there are a number of variables inherent in communicating a message that an air commander cannot control: specifically, the adversary may not receive the entire message, or may interpret it incorrectly because of cultural factors, or may simply choose to ignore it. One must also remember that the capabilities of air defenses will not stand still. With the proliferation of modern air defense systems around the world, and the great desire on the part of many nations to find a means of limiting the effectiveness of American stealth technology, the U.S. may not always have the same ability to send a subtle message through the use of airpower that it enjoys today.

Finally, Gen Ryan's level of detail and control was practical for an operation as small and as short as Deliberate Force, but it does raise questions about the limits of any one individual's span of control. During the operation, General Ryan and a few members of his immediate staff at the Combined Air Operations Center worked 18-hour days. These officers were naturally quite tired at the end of the operation.[248] This fact suggests that this level of control may not be possible for operations that are significantly larger or longer than Deliberate Force. If successful communication through the graduated use of airpower hinges on the close control of the air operation, a large or lengthy operation may hinder airpower's potential effectiveness as a means of communication, simply because of the human element.

Based on this analysis, the evidence of the dexterity with which air commanders can now wield airpower, coupled with the increased precision of the instrument itself, suggests that, under the right circumstances, it may now be possible to communicate subtle messages through airpower if the message is sent through increasing the numbers of sorties and the intensity of the strikes, changing the location of the targets, and escalating the sensitivity of the targets. However, one must keep in mind that the problems inherent in the execution of an air campaign, the weather and the difficulty at times in finding and striking targets successfully, can limit airpower's ability to send messages; this is particularly true if the transmission of the message depends on the destruction of targets at the time required by the master plan. Moreover, airpower must have the capability to find and destroy these targets. The Air Force's doctrine and force

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[248] Owen, 487.

structure at the time of Vietnam, which contributed to a lack of sortie effectiveness, contributed to the poor communication. The increase in the Air Force's and Navy's capability to deliver precision-guided munitions, as well as the close control demonstrated in Deliberate Force, suggests that the services are on their way to solving this problem. Yet despite this capability, airpower works best as a communication tool when it is used in a manner more in line with its nature, a blunt instrument, instead of trying to use it as part of a nuanced diplomatic exchange. Finally, using airpower as a means of communication runs the risk of sending unintended messages to the adversary. Because of the combat power that airpower brings to a conflict, an adversary is likely to view airpower's initial use or escalation in its use as a provocation that he must respond to, jamming the message that airpower's use was meant to convey.

Knowing the Adversary

Given the assertion that airpower now has an improved capability to communicate with an adversary, to do this effectively requires an even greater need for understanding one's adversary. An analysis of the three campaigns provides ample evidence reinforcing the need for this kind of knowledge. The Americans at the beginning of Rolling Thunder thought they understood the North Vietnamese. The civilian leadership in Washington believed that if they threatened North Vietnam's warmaking capacity, then Hanoi would concede to their demands to stop aiding the Viet Cong. Unfortunately, Washington imposed its own ethnocentric view of what was important on the North Vietnamese, and as a result, attacked a target set that had insufficient compellent effect on Hanoi.

The United States also did not realize the importance of the North Vietnamese goal. What the decision makers in Washington failed to recognize was Le Duan's faction in the Politburo had invested so much politically to get North Vietnam on the path of armed struggle for the reunification of Vietnam that it would have been political suicide for them to backtrack in the face of American threats. As a result, a successful compellent campaign against Hanoi to stop supporting the Viet Cong would have required airpower to inflict more damage than Washington could ever countenance in the international and domestic climate that the President Johnson and his advisors faced at the time.

The Israelis in the War of Attrition faced a different problem. As the conflict

slowly escalated, Tel Aviv believed it could instigate the overthrow of the Nasser regime. But the IAF's strikes deep in Egyptian territory only caused the populace to rally around their leader. Unfortunately for Tel Aviv, they misread the problem that deep strikes would pose for Nasser, and his reaction to that problem. Not only did they miscalculate about Nasser turning to Moscow for help, but they also misread Soviet intentions. Moscow had to assist Nasser, or else all its rhetoric about the importance of Egypt and the Middle East would have been hollow. Moreover, the Soviets had been looking for a way to get their foot in the door in the Middle East, and particularly in the Suez Canal area. Their objectives here were to reestablish the strategic balance along the Suez Canal, which was threatened by the Israeli deep strikes into Egypt, as well as to start their own diplomatic efforts to solve the conflict in the Middle East while they had the best possible bargaining position.[249] So when Nasser came to Moscow looking for assistance, the Soviets saw the opportunity to increase their influence in the region. Finally, Tel Aviv misperceived the intentions of the United States. Faced with the need to have Washington squarely on their side to counter the Soviet intervention, Tel Aviv was forced to accept the *quid pro quo* for this support: their agreement to the Rogers Plan. This Israeli misperception of Cairo's and Moscow's reactions to their deep-strikes eventually led to circumstances that compelled Tel Aviv to agree to Washington's political solution, as well as the diminishment in their strategic superiority along the Suez Canal.

Fortunately for NATO during Deliberate Force, the alliance had a good understanding of the Bosnian Serb leadership as well as that of the BSA. NATO concluded that the Bosnian Serb center of gravity was their historic fear of domination. The best way for them to affect this center of gravity was to alter the military balance in the region between the Bosnian Serb and Federation forces. NATO assessed that the Bosnian Serb military advantage came not from having a larger military, but one that was more capable and that could easily be redeployed to wherever the leadership thought it was necessary. By striking the communication system of the former Yugoslavia, NATO hindered Bosnian Serb ability to shift forces on the battlefield. This effort, in addition to striking the forces themselves, allowed NATO to effect a shift in the balance on the battlefield and make the Bosnian Serbs feel that their existence as an entity might be in

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[249] Bar-Siman-Tov, 149.

jeopardy.[250]

Moreover, NATO and the UN leadership conducted attacks against authorized targets that were especially chosen for their psychological impact on the BSA commander, General Ratko Mladic. These included attacks on the lines of communication mentioned above, as well as attacks on the Bosnian Serb telecommunications capability. The goal here was to limit Mladic's ability to control events on the battlefield. NATO also struck authorized targets near Mladic's hometown, the intent being to demonstrate to Mladic's relations that he could not keep the country safe. One UN official termed this "voodoo" targeting.[251] Its effects on Mladic may never be known, but this suggests that an air commander should consider any attack that might add to the cumulative compellent effect against a leader or a government.[252] In this case, knowledge of the enemy general's psyche and its potential leverage strongly illustrate the benefits of knowing the adversary.

Understanding an adversary's motivations, his decision-making processes, what he considers to be valuable within his society, as well as a good sense about his reaction to your moves are all essential for the successful use of airpower, regardless of how it is used. The Americans in Rolling Thunder and the Israelis in the War of Attrition demonstrated that they did not understand their respective adversaries, and paid the price. NATO's success in Deliberate Force strongly suggests that they had at least an adequate understanding of the Bosnian Serbs and their leadership, an understanding that significantly aided their efforts at compellence. This evidence, in turn, suggests that intensive and extensive knowledge of the adversary is a necessary, but not a sufficient, condition for the successful graduated use of airpower.

The Importance of Air Supremacy

The evidence in all three cases illustrates the importance of achieving air supremacy. As shown in Chapter Four, theory suggests that if one can establish air supremacy over an adversary's territory and then use airpower with relative impunity against targets that the adversary values, the adversary will develop a sense of impotence

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[250] Ripley, 268.
[251] *Ibid.*, 269.

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that will degrade his morale and his will to continue resisting.

The United States, mostly because of self-imposed constraints, was not able to achieve air supremacy over North Vietnam during Operation Rolling Thunder. Because of this, it is plausible to conclude, although impossible to prove, that the North Vietnamese leadership, military, and civilian population never felt impotent to stop American airpower and the punishment that it was inflicting. To the contrary, it is plausible that the North Vietnamese air defenses' success in shooting down American aircraft and the parading of prisoners throughout the country demonstrated to the military and the population that they were not impotent in the face of the American attacks. If true, this would have given the North Vietnamese a significant psychological boost and encouraged them to continue their struggle.

It was a different story for the Israelis during the War of Attrition. While Tel Aviv did not initially plan for it as an objective, the IAF was able eventually to gain air superiority over the Egyptian positions near the Canal and demonstrated this fact to Nasser and to the Egyptian population by flying strike missions deep in Egypt. Unfortunately for the Israelis, gaining air superiority backfired on them. Nasser's realization that Israel's air superiority was a problem that he could not deal with forced him to go to Moscow and secure Soviet military assistance. It was Moscow's patronage of Nasser that foiled Israeli air superiority's chance to impose its compellent effect.

Deliberate Force demonstrated the compellent effect that air supremacy can impose on an adversary. NATO quickly gained air supremacy over the Bosnian Serbs and then rapidly exploited it, not only for the physical damage that airpower was able to inflict on the BSA, but also, as detailed in Chapter Six, for its psychological impact on the Bosnian Serb leadership.

Three factors contributed to this contrast between Rolling Thunder and Deliberate Force. Unlike in Vietnam, the NAC authorized NATO military commanders to attack the Bosnian Serb air defense system anywhere in Bosnia once one of the designated trigger events occurred. This allowed General Ryan to suppress the air defense in the manner that proved to be a good balance between operational needs and protecting the lives of

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[252] This assumes, of course, that an air commander has the assets to do this and that there are not other more pressing targets that need to be struck.

the aircrews. Moreover, the United States' airpower in the mid-1990s had a much greater capability to suppress a Soviet-style air defense than it did during Rolling Thunder. Precision-guided munitions and sophisticated electronic warfare and defense suppression capabilities allowed airmen to attack the air defense in much greater safety than they could during Rolling Thunder. NATO airpower's ability to strike at the air defenses with great impunity in all likelihood imposed a significant feeling of impotence on the Bosnian Serbs, who knew that there was nothing that they could do to stop NATO's air attack. Finally, NATO possessed a significant qualitative and quantitative edge over the BSA, an edge that was much greater than the edge the U.S. had over the North Vietnamese. While the Americans did have air superiority over the North, the North Vietnamese Air Force's strategy of air denial forced the U.S. to fight for air superiority every time they penetrated North Vietnamese airspace.

The importance of gaining air supremacy over an adversary's territory is particularly important in a graduated campaign. In such a campaign, the amount of combat power that one can initially use to compel an adversary is limited; because of this, it is important to take advantage of every possible compellent effect. If one does not have air supremacy, or if one must continually fight for air superiority, then the resulting loss of assets, due to either the adversary's air defenses or to the diversion of assets and energy in order to gain air superiority, will decrease the physical compellent effect that one can apply to an adversary. And since the physical compellent effect that one can initially apply in a graduated campaign is limited, it places even greater importance on air supremacy's psychological compellent effect.

The evidence from the three campaigns, along with its implications, suggests that achieving air superiority is a necessary, but not a sufficient, condition for the successful use of airpower in a graduated manner.

Coordination of the Military and Diplomatic Efforts

The evidence from the three cases shatters the conventional wisdom regarding the theoretical proposition that the military and diplomatic efforts against an adversary must be coordinated at the highest level. Chapter Five demonstrated why Johnson and his advisors believed they had to control Rolling Thunder's strikes from Washington. It was

a different story in Deliberate Force. Little coordination occurred between the NAC and military instrument after the conflict commenced. General Ryan received the authorization to strike targets prior to the beginning of the operation—how he stuck those targets was up to his judgment. NATO military commanders demonstrated during Deliberate Force that the military is capable of successfully executing a politically risky military operation within a tightly constrained environment. Deliberate Force also demonstrated that coordination between the military and diplomatic efforts is not necessary for the successful use of graduated airpower. It should be noted, however, that coordination between Ryan and Holbrooke would perhaps have resulted in a more effective use of airpower and of diplomacy.[253]

Implications for the Theory of Gradualism

Based on the evidence of the graduated use of airpower, it is possible to assess its implications for the propositions of gradualism developed in Chapter Two:

> Central proposition: "The power to hurt is bargaining power. To exploit it is diplomacy—vicious diplomacy, but diplomacy."[254]
> The other propositions:
> 2. Since bargaining is a key aspect of compellence and gradualism, a graduated campaign must necessarily be controlled at the highest level
> 3. The coercer must have intensive and extensive knowledge of the adversary
> 4. Communication between the adversaries is a critical component of gradualism

Based on the historical evidence of the three instances of the graduated use of airpower, it is possible to refine these propositions . The central proposition should remain unchanged. The military instrument's primary means of compellence is its ability to hurt what an adversary values.

The historical evidence refutes the theoretical proposition of the necessity of coordinating the military and diplomatic instruments at the highest level for a successful graduated campaign. Vietnam demonstrated the practical difficulties that a large foreign policy apparatus experienced in trying to control these actions. Deliberate Force showed that while political control is important, day-to-day micromanagement may only hinder

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[253] Owen, 503-5.

[254] Thomas C. Schelling, *Arms and Influence* (New Haven, Conn.: Yale University Press, 1966), 2.

the effective implementation of the plan. Political decision-makers can exercise their control through prior authorization of many of the key aspects of the military campaign and then remain above the actual operational details. Deliberate Force also demonstrates that while close coordination between the military and diplomatic efforts, if not strictly necessary, is useful and beneficial to both the military and diplomatic efforts.

The historical evidence strongly reinforces the idea known since the days of Sun Tzu that an intensive and extensive knowledge of the adversary is critical. Not only is this true for what the adversary values the most, as Schelling's theory of gradualism indicates, but a political leader and his military commanders must also understand how strongly the adversary's leadership holds the goal from which it is to be dissuaded, his decision-making processes, as well as what his likely reaction might be to your threats and actions. As shown in Vietnam, it is possible that the most important thing that an adversary values is the goal that he is trying to achieve. A government must also realize that an adversary may simply not be coercible, at least within the limits of the punishment that a government can inflict, either for moral, legal, political, or military reasons.

Finally, the evidence from graduated campaigns demonstrates that through the close control of an instrument that is becoming increasingly precise, it may be possible to use airpower as an effective means of communicating a subtle message. However, airpower's limitations, and their effect on communication, must always be kept in mind. Weather will continue to limit airpower's ability to strike targets. Cultural factors may result in a message being misunderstood. Finally, while this is a fascinating trend with intriguing potential, the preponderance of history suggests that if decision makers intend to signal intent or show resolve through the deployment of airpower or its innocuous use, the message is likely to be ignored. If airpower is used in a manner that emphasizes its strengths by quickly massing combat power on the battlefield wherever the military or political decision maker decides, then any message such use is intended to convey is very likely to be heard and understood.

New Thinking about Gradualism

The evidence of the three cases of the graduated use of airpower suggests the need for new thinking about gradualism. As suggested in Chapter Five, the strategic variables of the Vietnam conflict, coupled with the North Vietnamese leadership's strong desire to reunify their country, contributed more to the failure of Rolling Thunder than gradualism did. Moreover, the success of the graduated use of airpower in Deliberate Force demonstrates that gradualism can work. But what is critical to gradualism's success or failure are the numerous variables of the strategic context—these will determine whether a graduated campaign can even work or the political constraints that are imposed on it. The success of Deliberate Force also shows that political decision-makers do not need to closely control the use of the military instrument. After giving broad political guidance, political decision-makers should then allow their military commanders the broadest operational latitude to conduct the operation. Finally, Deliberate Force indicates that while the conventional wisdom regarding close coordination between the military and diplomatic efforts is not necessary, it is still highly desirable.

CHAPTER EIGHT

THE CONDITIONS FOR THE GRADUATED USE OF AIRPOWER

In a democratic country it is the duty of soldiers to know how to wage war in any of its forms…

General Sir Frank Kitson, *Low Intensity Operations*, 1971

If there is one attitude more dangerous than to assume that a future war will be just like the last one, it is to imagine that it will be so utterly different that we can afford to ignore all the lessons of the last one.

Wing Commander J. C. Slessor, *Air Power and Armies*, 1936

Introduction

Thomas Schelling's theory of gradualism presents an attractive policy option to national decision-makers. By attacking what an adversary holds dear, it should be possible to compel him to accept your demands. Gradualism and airpower together offer the policymaker an option that is both economically and politically inexpensive. By eliminating the need for the use of ground forces, the graduated use of airpower provides the policymaker the chance to conduct foreign policy on the cheap.

Historical evidence regarding the graduated use of airpower illustrates the difficulty of translating this theory into reality. While airpower is most effective when it is used in a manner accentuating its best characteristics, its ability to quickly mass combat power anywhere on the battlefield, national decision-makers and airpower leadership must be prepared to use airpower in a manner that is less than optimal. In preparation for this eventuality, this paper examined the graduated use of airpower in three campaigns: Rolling Thunder, the Israeli-Egyptian War of Attrition, and NATO's Deny Flight/Deliberate Force. This chapter answers the thesis's research question, what conditions must national and military leadership fulfill or avoid to maximize the chances for success of the graduated use of airpower?

Conditions

This thesis examined only three cases of the graduated use of airpower, and therefore, it would be irresponsible to offer definitive prescriptions about what a government must do to ensure the success of the graduated use of airpower. Graduated

escalation will not always be a suitable strategy since it depends so much on circumstances and the strategic context. It is possible, however, to describe some of the conditions that are important to consider, and their probable effects, that national leadership and their military strategists need to understand in order to determine when and how to use gradualism. Armed with this knowledge, they will be better prepared to avoid the sort of policy failures of that have given gradualism a bad name in the past.

Isolating the Adversary

Perhaps the most important condition that national leadership can achieve in a compellence situation is the diplomatic and economic isolation of the adversary. This is particularly true where the military instrument is applied in a graduated manner. Since an adversary's costs of non-compliance will only slowly increase in a graduated campaign, the support and incentive that a patron might provide may well be enough to overcome these costs and to allow a compelled state to hold out through the slow escalation of a graduated campaign. Moreover, if the patron is sufficiently powerful militarily, it may force the compelling state to restrict its actions to avoid an escalation. This was true for both North Vietnam during Operation Rolling Thunder and for Egypt during the War of Attrition. Ironically, it is this fear of intervention and the resulting need for constraint that drove Washington and Tel Aviv to choose graduated campaigns. Conversely, while the Bosnian Serbs had a powerful regional patron for a while in Serbian President Milosevic, the West had successfully compelled Milosevic, through economic sanctions, to cut ties with the Bosnian Serbs. Milosevic became an important player in establishing a Bosnian cease-fire and in the negotiation of the eventual Dayton Accords.

Knowing the Adversary

The analysis in the earlier chapters reconfirms the importance of knowing one's enemy. In the post-World War Two era of coercive airpower, Schelling's theory of compellence and gradualism suggested new requirements for information about the adversary: what does the adversary value that a threat to it would compel him to accept your demands? The historical evidence from the graduated use of airpower suggests a few more information requirements. As shown in Chapter Five's examination of Rolling

Thunder, knowing how important the adversary's goal is to him is critical. If this goal is deeply valued, then it may be difficult to dissuade him from pursuing it. In addition, the analysis of Rolling Thunder's attempt to compel the North Vietnamese leadership also demonstrates the importance of understanding how an adversary makes decisions. Washington's assumption that Hanoi made decisions based on the rational actor model oversimplified the process, and contributed to their incorrect conclusions about how easy compellence would be in this situation. Israeli decisions during the War of Attrition, outlined in Chapter Six, demonstrate the need for knowing how an adversary will react to one's moves. Tel Aviv not only miscalculated Nasser's reaction to their deep strikes into Egypt, but also did not correctly predict the Soviet and American reactions, much to their regret. As the complexity of these situations increases, so does the level of detailed information that must be known about an adversary. The nature of these requirements suggests that the information needed about an adversary is not limited simply to technical information about the adversary's military capabilities. It suggests an increased need for information and analysis regarding an adversary's historical and philosophical background, and its political motivations and processes.[255]

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[255]Fortunately, the Air Force has taken a major step forward in this area. At Corona South 96, senior Air Force leadership mandated that 10% of all Air Force officers will be proficient in some foreign language by 2005 (proficiency is defined as achieving a score of at least 2 on both the reading and listening portions of the Defense Language Proficiency Test (DLPT)). This amounts to 6,900 officers; by the end of 1999, the Air Force had achieved half this goal. Furthermore, in response to Department of Defense tasking, the Deputy Under Secretary of the Air Force for International Affairs established the Air Force Foreign Area Officer (FAO) program in June 1997 and charged it with the development and proponency for the Air Force FAO and language training programs. The Air Force FAO Program's goal is to develop officers who are not only proficient in a language, but who are also knowledgeable about a region, either through experience or through education. The Air Force, by standing up its FAO program, has taken a step forward to understanding an adversary in wartime, in addition to understanding allies as the Air Force evolves towards the Expeditionary Air Force concept. Lt Col Brian Vickers, Air Force Foreign Area Officer Program, Deputy Secretary of the Air Force, "Foreign Area Officer (FAO) and Foreign Language Program: CY 1999 Consolidated Report."

Having such knowledge of the adversary is particularly important in a graduated campaign. Since airpower will only be able to slowly increase the amount of combat power it can apply against an adversary, it is essential that this combat power produce the maximum fear of punishment to an ensure that an adversary's expected costs for non-compliance are as large as possible. And to do this, knowing what an adversary values and how it makes decisions becomes essential pieces of information.

Airpower and Communication

The graduated use of airpower in Deliberate Force strongly suggests that airpower may be becoming sufficiently precise and air commanders sufficiently dexterous in its control that it could be used as a means of sending subtle messages. But the problems inherent in operating in the medium will continue to make this a difficult goal to achieve, especially if the subtlety of the message is contingent on individual sortie effectiveness. Moreover, there are other variables involved in such a communication process; these include whether the adversary receives the entire message, as well whether the adversary misinterprets it because of a cultural misunderstanding. "Hoping" that an adversary will correctly interpret such a message is not an assumption that any competent planner would make. While airpower has made strides towards increasing its ability to hit any target on demand, relying on it to do so in order to send a message should still be viewed as a risky proposition.

It is possible to improve airpower's capability to communicate. Investment in technology that will assist an air commander in a Deliberate Force-style close control campaign will go a long way to increasing a commander's span of control, as well as allowing that commander to conduct such a demanding operation for a lengthy period of time. And it goes without saying that the Air Force will continue its investment in precision-guided munitions that will increase its capability for precision strike in any kind of weather.

The Importance of Gaining Air Supremacy

National leadership must allow air commanders to employ airpower to either achieve air supremacy over an adversary, or employ it in a manner that eliminates the need for air supremacy, such as with stand-off weapons. As Maxwell Taylor, an influential military and civilian advisor to both President Kennedy and Johnson, reflects in his memoirs about gradualism: "No one, not even the President, has the moral right to

put a man on the battlefield or in hostile air space and restrict him from taking all the measures needed for his survival and the execution of his mission."[256] Aside from the moral issue that Taylor correctly identifies, there are two other reasons that demonstrate the importance of achieving air supremacy, particularly where airpower is being used in a graduated manner. The first is the importance of maximizing the physical compellent effect against an adversary. Chapter Five illustrated that while the United States had air superiority over North Vietnam, the North Vietnamese tactic of air denial forced the U.S. to gain air superiority every day that it went into North Vietnamese airspace. The diversion of assets and energy to suppress the adversary's air defenses means that there will be fewer aircraft available for imposing the physical compellent effect. The other benefit that air supremacy brings to a graduated campaign is the additional compellent, psychological effect that air superiority can impose on an adversary. Chapter Six showed how NATO's achievement of air supremacy in Deliberate Force added significant compellent force to the Bosnian Serb leadership: the impotence that one feels when an adversary's aircraft are flying over you, destroying the things that you value, and knowing that there is nothing that one can do to stop it.

Coordination of Diplomatic and Military Efforts

While the theory of gradualism proclaims the importance of coordinating a graduated campaign at the highest levels of government, the historical evidence of Operation Deliberate Force demonstrates that this coordination is not necessary for a successful graduated campaign. However, despite the fact that Assistant Secretary of State Richard Holbrooke was able to use the compellent aspects of a graduated air operation to his advantage without coordination with the military instrument does not mean that such coordination will not be necessary or desirable in the future.

In the future, one possibility to ensure that this coordination occurs outside of Washington is for the government to form a joint interagency task force (JIATF) to control and coordinate all the various instruments of a compellent campaign. Currently in use in the counter-narcotics effort, a JIATF is analogous to a joint task force: all federal departments and agencies with a stake in the issue are represented in the organization and one person is appointed to ensure that the actions of all the agencies are

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[256] Maxwell D. Taylor, *Swords and Plowshares* (New York: W. W. Norton & Company, Inc, 1972), 404.

properly coordinated. Like the North Atlantic Council did for their military commanders prior to the beginning of Deliberate Force, national decision makers would give the JIATF chief broad guidance regarding political and military objectives and restraints, and then let the JIATF chief and his team decide how best to implement this guidance. This would go a long way to reducing the inertia inherent in a large, clumsy national security apparatus, as well as providing much greater responsiveness to an adversary's countermoves.[257]

Control of Airpower in a Graduated Campaign

The manner in which NATO's political and military elements planned and conducted Operation Deliberate Force should be viewed as an archetype for the future. Political decision-makers should provide their input through the issuance of broad guidelines and constraints to military commanders, including, if possible, the pre-approval of target sets as well as the overarching scheme for the campaign. Upon giving this political guidance, political decision-makers should then let the military commanders run the day-to-day execution of the operation. This will ensure that airpower can be employed in its most effective manner and ensure that the aircrews have the best chance of surviving the operation. By giving military commanders the operational latitude to conduct the campaign to its best military effectiveness, political leadership will go a long way towards maximizing the chances for success, especially in a graduated campaign.

Deliberate Force also provides lessons for the command and control of airpower in a graduated air operation. Because of the volatile nature of the region and the potentially disastrous strategic effect of one misplaced bomb, Lt Gen Ryan, the Commander of Allied Air Forces in NATO's Southern Region, kept close control of the air campaign. This successful close control of airpower suggests that it might be possible to control airpower in a manner where subtle messages can be sent through graduated

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[257] While a JIATF would be a great innovation for unilateral United States efforts, its implementation becomes more difficult when the United States elects to operate with other independent organizations, such as the United Nations or NATO. It is questionable that a JIATF-type organization could have been effective in an operation like Deliberate Force where the United Nations and NATO objectives and priorities were not completely in-step with each other. In addition, individual countries within an alliance or coalition scenario may have different ideas about how to proceed on a specific matter of policy, where a resolution might only be resolved only between heads of state; this again would make it difficult for a JIATF-type organization to work. Still, this concept has merit and is worthy of further study.

escalation, whether the escalation occurs by changing the geographical location of the targets, increasing the number of sorties, increasing in the sensitivity of targets, or escalating the type of weapons used.

Conclusion

The graduated use of airpower may be here to stay. Its apparent success in Operation Allied Force, as well as the demands of coalition cohesion, the imperatives of world and U.S. public opinion that demand limited damage to an adversary, or simply the lack of assets may all drive future air operations to be graduated. The graduated application of airpower contradicts the military and airpower theories upon which modern airpower is built. Modern airpower is not designed to send subtle messages; it is a product of almost a century of evolution in the delivery of massed combat power to the decisive point, whether that point be on the battlefield, the adversary's warmaking capacity, or his leadership's decision-making capability.

The lessons of recent applications of graduated airpower suggest that it is possible to successfully use airpower in a graduated manner to compel an adversary. But airpower cannot do this alone. Diplomacy must isolate the adversary. Intelligence must ensure decision-makers have extensive and intensive knowledge of the adversary. National decision-makers must understand that airpower's nature limits its ability to send subtle or tacit messages to an adversary. Air supremacy has a significant inherent compellent effect that must be exploited. National decision-makers must have the courage to delegate close control of the diplomatic and military efforts to ensure timely responsiveness to the evolving situation, as well as to make sure that the military effort, while graduated, is conducted as effectively as possible. Analysis of Rolling Thunder, the War of Attrition, and Deliberate Force demonstrates that the unique circumstances of each situation will determine whether graduated escalation will be a suitable strategy. National decision-makers and military leaders must be cognizant of these of these conditions and their impact as they decide when and how to use airpower in a graduated manner. An understanding of these conditions will go a long way to avoiding a repetition of the policy failures of the past.

ROLLING THUNDER 5-12[258]

SERIES	TARGETS	APPROXIMATE LOCATIONS	DATE STRUCK	APPROXIMATE NUMBER OF SORTIES
ROLLING THUNDER FIVE	Xom Bang Ammo Depot Quang Khe Naval Base	35 miles N DMZ 235 miles S Hanoi	March 2, 1965	104 U.S. aircraft 19 South Vietnamese Air Force (VNAF) A-1s plus U.S. flak suppression
ROLLING THUNDER SIX	Tiger Island barracks	20 miles off North Vietnam's coast, 290 miles S Hanoi	March 14	24 VNAF A-1s plus U.S. flak suppression
	Phu Qui Ammo Depot	100 miles SW Hanoi	March 15	More than 100 U.S. aircraft
ROLLING THUNDER SEVEN	Phuvan and Vinhson ammo and supply depots	155 and 220 miles S Hanoi	March 19	More than 120 U.S. aircraft
	Vu Con barracks	15 miles N DMZ	March 21	VNAF A-1s plus U.S. flak suppression
	Armed reconnaissance plus Vihnson radar	60 miles N DMZ	March 22	8 U.S. F-105s
	Armed reconnaissance plus Bubinh radar	10 miles N DMZ	March 23	8 VNAF A-1s
	Armed reconnaissance (Quang Khe harbor plus Phuxa radar	235 miles S Hanoi	March 24	8 VNAF A-1s plus U.S. flak suppression
ROLLING THUNDER EIGHT	Bachlong Island radar Ha Tinh radar Cap Mui Ron radar Vinhson radar	120 miles SE Hanoi 185 miles S Hanoi 205 miles S Hanoi 220 miles S Hanoi	March 26	Unknown
	Bachlong Island radar	120 miles SE Hanoi	March 29	42 USN jets plus 12 flak suppression
	Donghoi airfield	250 miles S Hanoi	March 30	24 VNAF A-1s plus flak suppression
	Radar sites at: Hon Matt Chu Lao Hon Nieu Ha Tinh Vinhson Cap Mui Ron	 155 miles S Hanoi 160 miles S Hanoi 155 miles S Hanoi 185 miles S Hanoi 220 miles S Hanoi 205 miles S Hanoi	March 31	 30 U.S. F-105s 12 U.S. F-100s 20 VNAF A-1s More than 50 USN jets
ROLLING THUNDER NINE	Dong Phuong Bridge Thanh Hoa Bridge	65 miles S Hanoi 72 miles S Hanoi	April 3	60 USN jets 50 USAF jets
	Thanh Hoa bridge and powerplant Dong Hoi bridge	72 miles S Hanoi 250 miles S Hanoi	April 4	Unknown 23 VNAF A-1s plus flak suppression

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[258] Wallace J. Thies, *When Governments Collide: Coercion and Diplomacy in the Vietnam Conflict, 1964-1968* (Berkeley, Calif.: University of California Press, 1980), 301-306.

	Two armed reconnaissance missions near Thanh Hoa	85 mile S Hanoi		45 USN A-1 and A-4s
	Armed reconnaissance Vinh Linh radar	Central North Vietnam 250 miles S Hanoi	April 5	10 U.S. F-105s plus flak suppression and CAP 30 USN jets 20 USN jets flak suppression and CAP
	Armed reconnaissance (Rte. 1 from DMZ to Vinh)	Roughly 165 miles S Hanoi at closest point	April 7	35 USN jets
ROLLING THUNDER TEN	Tamda Hwy Bridge Qui Vinh RR bridge Khe Khien Highway bridge	120 miles S Hanoi 110 miles S Hanoi 110 miles S Hanoi	April 9	140 USN aircraft total 50 USAF F-105s
	Kim Chuong Bridge Two armed reconnaissance missions	150 miles S Hanoi 120 miles N DMZ	April 10	75 USN jets 40 USAF F-105s
	Thanhyen Highway Bridge Hon Mott radar and Cualo River radar	235 miles S Hanoi 155 and 130 miles S Hanoi	April 13	16 VNAF/USAF strikers; 12 USAF flack suppression 40 USAF jets
	Hon Mott radar and Cualo River radar Night armed reconnaissance Night armed reconnaissance	155 and 130 miles S Hanoi Unknown Unknown	April 14	30 USAF jets 12 USN jets VNAF A-1s
	Armed reconnaissance Night armed reconnaissance	120 mile SW Hanoi North Vietnamese coast, 165 miles S Hanoi	April 15	6 F-105s plus flak suppression aircraft 4 VNAF A-1s
ROLLING THUNDER ELEVEN	Road and RR bridges near Phudienchau Xomcatrand bridge and Baiduethon bridge	150 miles S Hanoi 185 and 170 miles S Hanoi	April 16	35 F-105s plus flak suppression aircraft USN jets
	Armed reconnaissance Mugia Pass Armed reconnaissance Railroad cars	Near Laotian border, 185 miles from Hanoi Not specified	April 17	12 F-105s with flak suppression and CAP More than 20 USN jets
	Armed reconnaissance Armed reconnaissance Armed reconnaissance	To within 60 miles Hanoi To 60 miles N DMZ To 60 miles N DMZ	April 18	2 USN A-1s 14 USN aircraft 3 A-4s
	Armed reconnaissance Armed reconnaissance Armed reconnaissance	Not specified 145 miles S Hanoi 165-185 miles S Hanoi	April 19	4 A-4s A-4s 8 VNAF A-1s

	Armed reconnaissance	To 65 mile N DMZ	April 20	4 VNAF A-1s
	Armed reconnaissance	Rtes 8 and 12		Not specified
	Armed reconnaissance	Rte 1		USN A-1s
	Armed reconnaissance	Rte 1, Vinh to 20th parallel		5 USN aircraft
	My Duc Hwy bridge	270 miles S Hanoi		15 USAF/VNAF aircraft
	Night armed reconnaissance	S Donghoi (250 miles S Hanoi)	April 21	2 USN A-4s
	Night armed reconnaissance	S Donghoi (250 miles S Hanoi)		4 US jets
	Armed reconnaissance	S Donghoi (250 miles S Hanoi)		4 VNAF A-1s plus 10 USAF aircraft
	Armed reconnaissance	Not specified		4 VNAF A-1s
	Armed reconnaissance	Near Mugia Pass (185 miles from Hanoi)		15 USAF jets plus flak suppression and CAP
	Night armed reconnaissance	135 miles S Hanoi	April 22	2 USN A-1s
	Night reconnaissance	Rtes 15 and 1		USN A-1s and A-4s
	My Duc Hwy bridge	270 miles S Hanoi		VNAF A-1s
	Baiduethon bridge	180 miles S Hanoi		8 USAF F-105s
	Vinh antiaircraft	165 miles S Hanoi		Unknown
	Barracks near Mugia Pass	185 miles from Hanoi		Unknown
	Armed reconnaissance	165 miles from Hanoi		18 USN aircraft
ROLLING THUNDER TWELVE	Xuanson ferry	270 miles S Hanoi	April 23	VNAF A-1s
	Phu Qui ferry	90 miles SW Hanoi		40 USAF F-105s, 4 A-1s
	Phucthiem bridge	120 miles S Hanoi		
	Ly Nhan bridge	110 miles S Hanoi		
	Phoson bridge	150 miles S Hanoi		
	Xomphuong bridges	245 miles S Hanoi		
	Xomgia bridge	150 miles S Hanoi		
	Sondinh hwy bridge	across Kiem River		
	Armed reconnaissance	Rtes 7, 8, 12		6 U.S. B-57s
	Komthaixa Hwy bridge	135 miles S Hanoi	April 24	35 USAF F-105s plus 25 flak suppression and CAP
	Vinhson ferry			
	Antiaircraft sites and bridges (4 raids)	Not specified	April 25	Not specified
	Songgiang River patrol boat	160 miles S Hanoi	April 26	Not specified
	Highway bridge	100 miles S Hanoi		
	Baiduethon bridge	180 miles S Hanoi		
	Armed reconnaissance (4 missions)	Not specified		
	Huu Hung Ferry	270 miles S Hanoi	April 27	4 VNAF A-1s
	Baiduethon bridge	180 miles S Hanoi		8 U.S. jets plus flak suppression and CAP
	Quang Khe naval base	235 miles S Hanoi	April 28	USN A-4s
	Bridges, ferries, boats	Not specified		Not specified
	Ron ferry	220 miles S Hanoi	April 29	VNAF A-1s
	Phovin and Phuongcan bridges	200 miles S Hanoi		4 USN aircraft

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